NSF Advisory Committee for Business and Operations
Electronic Book
Fall 2019 Meeting
December 9 – 10, 2019

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National Science Foundation
Advisory Committee for Business and Operations
Fall 2019 Meeting

December 9-10, 2019
Room E 3410

Monday, December 9, 2019

1:00 pm **Welcome/Introductions/Recap**
Co-Chairs: Chuck Grimes and Susan Sedwick

1:15 pm **Updates: BFA; OIRM; Budget/OLPA**

Presenters: Teresa Grancorvitz, BFA; Wonzie Gardner, OIRM; Caitlyn Fife, BFA; Amanda Greenwell, OLPA

1:45 pm **Results from the 2019 Federal Employee Viewpoint Survey (FEVS)**
Review NSF's FEVS results.

Presenter: Pat Curtin, Lauren Forgacs, OIRM

Discussant: John Palguta

The Federal Employee Viewpoint Survey (FEVS) is an annual measure of NSF staff's perception of the workplace across several dimensions. Each year, all staff are invited to share their perspectives on their work unit, supervisor and leadership, and NSF culture. FEVS results are a major input into employee engagement action planning by each directorate and office. Senior leaders see the connection between engagement and productivity, willingness to change and innovate, and retention of our talent.

NSF staff are invested in the employee engagement process, as evidenced by the 71% response rate on the FEVS, compared to the government average of 43%. We have achieved four years of sustained improvement across all the engagement areas of focus – career development; performance and recognition; workload; and inclusion. In 2019, the score on the workload index (Items 9 & 10), went down one point.

OIRM continues to build out resources that support the directorates and offices as they work to improve engagement. Along with providing full transparency on all NSF FEVS results, we also have incorporated a module on effective employee engagement strategies in our Federal Supervisor training course, published a curated engagement website with resources touching many topics, facilitated a managers' brownbag discussion on employee morale and engagement, and are providing consulting support to the directorates and offices.

Committee Action/Feedback:

1. What promising practices have you seen organizations like NSF use to sustain incremental improvements in engagement over time, or to stimulate more significant boosts to engagement?
2. NSF has a workforce with a diverse set of people and life experiences. How have you seen organizations successfully integrate STEM and non-STEM staff working side-by-side on the same mission?
3. NSF has made progress on improving methods to help NSF staff deal with their workload. However, NSF still sees a need to help staff better manage their growing workload given current resources, time, new technology, etc. In today's climate of "do more with less", how have you seen organizations or workforces successfully deal with increasing workplace demands when staff already see their workload as being difficult to complete?

2:30 pm **Balancing Mission, Risk and Compliance**
In this session one of the authors of the recent report published by the Bipartisan Policy Center- "*Oversight Matters: Balancing Mission, Risk and Compliance*" will provide a high-level summary of the report as a framework to examine the concepts of risk, mission and compliance in the NSF context.

How can NSF create a culture that appropriately considers risk and compliance while improving NSF performance of its mission, leveraging such report recommendations as: suggesting oversight bodies spend more time on mission-related values and outcomes rather than compliance; incentivizing

performance characterized by a risk-balanced perspective in achieving operational, compliance, and reporting objectives; and that oversight be smarter and strategic through risk-based and data-driven policies? Are there best-practice examples from committee members' institutions?

Guest Speaker: Robert Shea, Principal, Public Sector Practice, Grant Thornton
Moderator: Alex Wynnyk, BFA
Panelists: Mark Bell, OIG; Fae Korsmo, OD
Discussants: John Kamensky, Doug Webster, Mike Holland

In July 2019, the Bipartisan Policy Center's Task Force on Executive Branch Oversight published a report entitled "Oversight Matters: Balancing Mission, Risk and Compliance." One of the Task Force's members, Robert Shea, will provide an overview of the report's observations and recommendations. The Task Force examined the current state of oversight, noted effective practices, and made recommendations to help improve Federal agency focus. The Task Force suggests that agencies eliminate compliance for compliance sake and focus on risk-based, data-driven compliance policies.

NSF strives to balance its efforts dedicated to mission performance with time spent fulfilling compliance requirements related to audit and Federal regulations. This session will help inform NSF and its stakeholders on ways in which NSF could improve its capacity to focus on mission.

The report provides 11 recommendations for agency leaders, external oversight bodies (for example, inspector generals, or the Governmental Accounting Office), the Office of Management and Budget, and Congress. Key recommendations for agency leaders and external oversight bodies include;

- Agency leaders should reduce the time they spend on compliance-related activities and dedicate more time to mission performance.
- Agency leaders should consider collecting proxy or qualitative data on the cost/benefits of time spent on compliance versus performance activities.
- Agency leaders should collect more robust measures of mission performance and analyze with risk measures to better identify root causes of risk.
- Agency Leaders should consult with and seek guidance from external oversight bodies.
- Agency leaders should define and adopt cultures that report and address risk.
- External oversight bodies should refocus oversight practices to include more mission-related values and outcomes in addition to the traditional emphasis on fraud, waste, and abuse.

Committee Action/Feedback:

1. Assess the applicability of the report's recommendations in the NSF environment.
2. Gauge NSF's status against these recommendations as to where NSF is performing well and where NSF has opportunities to improve.
3. Identify areas that NSF should explore.

4:00 pm **Break**

4:15 pm **Preparation for Meeting with Dr. Crim**

4:30 pm **Meeting with Dr. Crim**

5:30 pm **Adjourn**

6:30 pm **Dinner- Joe Theismann's**

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Tuesday, December 10, 2019

8:00 am

NSF's Leadership Development Program

Presenters: Doug Deis, Macey Cox, Tracy Bojko, OIRM

Discussants: Jan Jones, Chuck Grimes

The National Science Foundation launched the first Leadership Development Program (LDP) in more than 25 years at the agency in January 2018 and will graduate its first cohort of Aspiring Supervisors (17) and Aspiring Executives (12) on December 12, 2019. This competitive, merit-based program is designed to enhance the leadership capabilities within the Foundation through robust training opportunities, mentoring, coaching, networking, and detail assignments. This program reinforces the Foundation's commitment to developing internal leadership capability by investing in our employees and their professional development.

The NSF LDP is a strategic program designed to:

- enhance NSF's capacity to effectively lead teams and organizations;
- develop the leadership capabilities of high-potential employees for their current and potential future roles;
- strengthen NSF's internal supply of highly-qualified, diverse candidates positioned to be competitive for supervisory and executive positions; and
- expose current and future leaders to development practices and networks.

Approach:
The program develops cohorts of rising leaders who understand the context within which NSF operates, who develop strong connections within the Foundation and across the federal government, and who make impactful contributions to NSF's success as a high-performing federal agency. As a highly trained, vetted and engaged group, LDP participants are eager to take on formal and informal leadership roles at NSF.

LDP Successes and Outcomes:

- LDP participants have expanded their personal and professional networks within and outside NSF and have reported many positive results of these new connections.
- Even before completing the program, LDP participants have made measurable positive impacts on NSF, for example, through the required details:
    - Seven participants have engaged in details that cross the research directorate/operational directorate lines (e.g., OIRM-EHR, CISE-BFA), learning to work across disciplines and providing a mechanism for cross-pollination of ideas and approaches.
- Every supervisor of an LDP detailee in the first year of the program was highly positive about their contributions agreeing that their employee is gaining the skills needed to move into more advanced leadership positions.
- Participants in the program have made meaningful connections, building a strong and diverse network of trusted advisors.

While it is too early in the program to measure organizational impact, NSF will continue to monitor progress with expected impacts to include:

- Pipeline of candidates for promotion aligned with needs results in increased rate of internal hires;
- Participants begin to see themselves as change agents, with increased willingness to take risks and innovate;
- Improved morale and engagement within participant cohorts—and among those who work with them;
- Strong learning and leadership culture; and
- Strong program reputation and visibility across the federal government.

Committee Action/Feedback:

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NSF is interested in determining how to continue to support and leverage the talents of the LDP graduates and improve the program to help further its objectives. Specifically:

1. How do you identify high potential employees in the federal government?
2. What is your recommended approach for developing executive and supervisory leadership competencies for high potential leaders of a federal agency?
3. How do we ensure that we best leverage the talents of program graduates?

9:30 am **Break**

9:45 am **CXO Office of Tomorrow: B is for Block Chain**

Follow-on to discussion at fall 2018 meeting agenda item CFO Office of the Future with key highlights, lessons learned and accomplishments, as well as an overview of NSF interdisciplinary moves to projects leveraging distributed ledger technology (block chain).

Presenters: Dorothy Aronson, OD; Mike Wetklow, BFA

Discussant: Adam Goldberg (Guest: Craig Fischer, U.S. Department of Treasury)

Respondents will provide a brief update on the prior year session on the CFO of the Future. Since last year NSF has made progress in robotic processing automation, advancing data analytics, strategic workforce planning, and interdisciplinary management approaches. This year's session will focus and solicit guidance on our developing efforts to explore game changing distributed ledger technologies more commonly known as Blockchain.

Simplifying Identification of Overlapping & Duplicative Research: NSF is planning to leverage advanced technologies to solve a persistent challenge in the grant-making community: duplicative and overlapping research grants across science research grant-making organizations including federal agencies such as HHS, USDA, NASA, DoD. To minimize duplication and overlap of the research grants, we will apply emerging technologies such as advanced analytics working on top of a Blockchain infrastructure to build a "Grants Community Blockchain" (GCB). The GCB network will provide instantaneous notification to participating organizations about proposal information determined to be the most valuable for sharing across participating organizations by comparing "proposal fingerprints".

This we successfully built the fingerprint: the key "block" in the "chain" and proved that comparing fingerprints reveals overlapping proposals. In doing so we "liberated" this proposal data while at the same time protecting proposal contents including intellectual property of merit and sensitive information.

Even without the full GCB built, we now have tools that will be used to simplify detection of possible duplicate requests. With the GCB in place, all participating agencies will reap the benefit of this advancement.

Reducing Burdens of Letter of Credit Processes and Systems: NSF recently launched a Federal Demonstration Project with the research community to quantify the workload burden of using multiple letter of credit drawdown systems. In addition, Treasury and NSF is working on a research and development project (i.e., proof of concept) to understand if a blockchain based payment request application offers any benefits for 1) increasing payment efficiency and transparency for sub-recipient payments; and/or 2) reducing prime and sub-recipient reporting for Federal payments that 'pass through' multiple parties. This proof of concept is strictly a "sandbox" test and will not be integrated with any Federal system(s) nor will there be any transfer of Federal data; all data used will be fictitious and will operate within a Contractor-hosted environment.

Committee Action/Feedback:

NSF is looking for the following feedback:

1. How do we educate the community and demystify distributed ledger technologies (e.g., do we need a myth busting campaign)?

2. How to scale the use cases, design a governance process and operationalize the tool as an innovative government-wide shared service solution.
3. How do we motivate and get the Research Community excited about this?

10:45 am **State of the BOAC**

Presenters: Charisse Carney-Nunes, BFA; Jeff Rich, OIRM

Discussants: Chuck Grimes, Susie Sedwick

NSF is constantly evolving and so must the mission operations and support provided by the Offices of Budget, Finance and Award Management (BFA) and Information and Resource Management (OIRM).

We will review changes that have occurred in the past six years in NSF, BFA and OIRM, in areas such as budget, staffing, strategic and priority goals, and Federal Employee Viewpoint Survey (FEVS) scores. It is particularly important for OIRM and BFA to deliver excellent services and support to NSF even with continuous change.

The BOAC provides valuable advice for NSF/BFA/OIRM to help business operations and to meet its strategic goals. We will review advice from the BOAC over the last six years and assess examples of impacts of the advice.

With the backdrop of both past BOAC advice and the current challenges NSF faces, we look to the BOAC members, particularly those members who will be leaving the BOAC after this meeting, for their observations on serving on the BOAC the last six years and how these learnings can maximize the impact of the BOAC and further improve NSF business operations.

Committee Action/Feedback:
We will pose the following questions first to the departing Committee members and then to the members at-large:

1. Please answer one of two optional questions:
    a) Look back: how far we've come and BOAC impact on NSF
    b) Look forward: opportunities to leverage BOAC to benefit NSF/BFA/OIRM over the next 3-5 years
2. In your time on the BOAC, discuss gaps you have observed and how we may address them going forward (i.e. committee size, scope, skill sets, diversity of topics presented, etc.)

11:45 am **CEOSE Update**

12:00 pm **Committee Business/Wrap Up – Adjourn**

NATIONAL SCIENCE FOUNDATION
Business and Operations Advisory Committee

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*** Committee Co-chairs**

NSF Business and Operations Advisory Committee
Member Biographies ~ Fall 2019

Dr. Tilak Agerwala
IBM Emeritus and
IBM Vice President (Retired)

Tilak Agerwala's career has focused on developing advanced research programs and game-changing strategic initiatives and on bringing innovative computing technologies to market. With the rapid "digitalization" of our world and the transformative impact this is having, Tilak is interested in applying big data, modeling, simulation, analytics, and augmented intelligence technologies to world class science and engineering, education, and leadership development. He is an IBM Emeritus, Executive-in-Residence, Grove School of Engineering, City College of New York, Adjunct Associate Professor, Pace University, New York, Adjunct Professor, National Institute for Advanced Studies, Bangalore, and Member, TKMA Consulting.

In his IBM career, spanning 35 years, Tilak held executive positions in research, strategy, advanced development, marketing, and business development. He was part of and led teams that developed and delivered leadership cyberinfrastructure technologies and supercomputers to industry, academia, and the national labs. As vice president, Systems, (2002 to 2013), he was responsible for IBM's research and advanced technology activities worldwide in future systems hardware and software technologies, including the BlueGene supercomputer. As vice president of Data Centric Systems (2013-2014) his team established a new paradigm for scalable systems leading to the delivery of the powerful supercomputer, Summit, to Oakridge National Lab.

Tilak is the Dr. S. Radhakrishnan Chair Visiting Professor at the National Institute of Advanced Studies, Bangalore India. He is a member of the NSF Advisory Committees on Engineering, Advanced Cyber Infrastructure, and Business and Operations. He is a Life Fellow of the IEEE and a recipient of the W. Wallace McDowell Award from the IEEE Computer Society. He has given well over a hundred invited presentations, keynotes, and distinguished lectures at conferences, universities and national laboratories worldwide.

Tilak has a Bachelor of Technology degree in electrical engineering from the Indian Institute of Technology, Kanpur, India and a Ph.D. in electrical engineering from The Johns Hopkins University. From 1975 to 1978, he was an assistant professor of Electrical Engineering at The University of Texas, Austin.

Dr. Benjamin L. Brown
Acting Facilities Division Director and ESnet Program Manager
U.S. Department of Energy, Office of Science

Dr. Benjamin L. Brown is the Acting Facilities Division Director in the Office of Advanced Scientific Computing Research and the program manager for ESnet, DOE's high-performance network user facility that provides tens of thousands of researchers—both in and outside DOE—with the ability to efficiently transmit extreme scale research data flows and to access unique Department of Energy research infrastructure. Ben is also the program manager for the Department's Project Leadership Institute, a leadership development program in project management. Ben has extensive knowledge and expertise in policy development and analysis related to large scale scientific research infrastructure and project management. A common focus in each of these roles is the strategic advancement of science and the DOE mission through cross-institutional knowledge-sharing, strategic planning, and partnership development.

Immediately prior to joining the Office of Science in 2008, Ben worked on energy and climate policy in the U.S. Senate as an American Association for the Advancement of Science (AAAS) Congressional Fellow. Ben is a physicist with experience working in U.S. government laboratories and academic institutions in both the U.S. and U.K; his research focused on optical control of quantum systems and quantum information science. He received his Ph.D. in optics from the University of Rochester and his bachelor's degree in physics from Harvard University.

Dr. Lee Cheatham
Director, Office of Technology Deployment and Outreach
Pacific Northwest National Laboratory

Lee Cheatham has focused his career on leadership in research management and operations, especially in the translation of that research into high-impact commercial products. Lee currently leads the Office of Technology Deployment and Outreach (TDO) at Pacific Northwest National Laboratory (PNNL), a Department of Energy national laboratory focused on making fundamental scientific discoveries and using its foundational capabilities to address key challenges in energy resiliency and national security. TDO's mission is to engage the Laboratory with industry, federal agencies, and state/regional organizations in developing and licensing PNNL's technology as a basis

for commercial products and to realize the greater impact of science and technology for economic growth.

Previously Lee served as Director of Strategic Partnerships at Brookhaven National Laboratory, and as Chief Operating Officer and General Manager of Commercialization for The Biodesign Institute at Arizona State University. For twelve years prior to Biodesign, Lee led the Washington Technology Center (WTC), an organization chartered by the State of Washington to accelerate growth and expand economic impact of small and medium-sized businesses. WTC funded these companies' collaborations with university researchers and provided programs to ease their access to growth capital.

Lee has private-sector experience as Vice President of Worldwide Product Engineering for a market-leading library software company and founder of a real estate technology and services company. He has served in scientific, engineering, and development positions, as well research program management roles, for energy systems modeling, large-scale environmental and military information systems, and medical device development programs. Lee received his Ph.D. from Carnegie-Mellon University, MS from Washington State University, and BS from Oregon State University, all in electrical engineering.

Dr. Robert M. Dixon
Interim Chair of the Department of Industrial and Systems Engineering
North Carolina Agricultural and Technical State University

Robert M. Dixon is a consultant with the Registry for College and University Presidents, which is based in Peabody, MA. As a consultant with this organization, he takes on interim leadership assignments at universities that need senior level management while in transition. Among his assignments, he has served as Interim Provost and Vice President for Academic Affairs at Cheyney University and as Vice President for Academic Affairs at the University of Maine at Fort Kent. He is currently serving as Interim Chair of the Department of Industrial and Systems Engineering at North Carolina A & T State University. During the last decade he has developed research interests in Number Theory. His career has involved dual paths of work in teaching and research, and in administrative leadership positions.

He received the baccalaureate degree in mathematics and physics with high honors from Morehouse College; the Master of Science degree in nuclear physics from Rutgers University; and the doctorate in theoretical nuclear physics from the University of Maryland. Dr. Dixon formerly served as the Dean of the School of Science at Hampton University. Prior to his work at Hampton he was Provost and Vice President for Academic Affairs at Grambling State University. During a period of sixteen years he was Chair of the Department of Physics at Morehouse College, a period that was characterized by considerable success in the production of graduates in the dual-degree engineering program with the Georgia Institute of Technology, in the production of graduates in physics and mathematics, and the acquisition of funded grants from foundations and federal

agencies. In this period, he received funding from the Air Force Office of Scientific Research, the Army Research Office, the Office of Naval Research, the AMOCO Foundation, the General Electric Fund, the William Penn Foundation, and the Sherman Fairchild Foundation. His background includes appointments at Morgan State University, Southern Polytechnic University, and Bishop College. Notably, Dr. Dixon is the founding chair of the M. S. degree program in physics at Atlanta University (now Clark Atlanta University). Upon graduation from Morehouse College, he began a long relationship with the Woodrow Wilson National Fellowship Foundation. He received a Woodrow Wilson Fellowship to attend Rutgers University. His first academic appointment was as a Woodrow Wilson Teaching Intern at Hampton Institute (now Hampton University). During his career he has contributed as a consultant to several programs sponsored by the Foundation. After some years in academe he served as a Director with an engineering firm. He developed and managed research projects supported by contract with the Department of Energy on nuclear waste disposal.

Throughout his career he has remained active in teaching and research. He has taught at the undergraduate and graduate levels. He has taught and mentored many students who have obtained the doctorate in physics or engineering. More than fifty of his former students have obtained advanced degrees in engineering, mathematics, or physics. He has maintained an active interest in research in applied mathematics. He is the author of several books and laboratory manuals in physics and articles on many-body scattering theory. He has served as a consultant to many public-school systems and universities on a wide variety of topics, such as diversity, improving the teaching and learning of science and mathematics, the preparation of mathematics teachers, expanding opportunities and increasing diversity in engineering, and improving retention. He is a member of the American Physical Society, the American Association of Physics Teachers, the American Association for the Advancement of Science, and the Mathematical Association of America.

Mr. Adam Goldberg
Director and Executive Architect
Department of the Treasury, Office of Financial Innovation and Transformation

Adam Goldberg is the Executive Architect at the Office of Financial Innovation and Transformation (FIT) at the Treasury Department's Bureau of the Fiscal Service. Within FIT, Adam supports financial management transformation initiatives that lead to government-wide efficiencies. He also serves as a Treasury Advisor to the Minister of Economy and Finance in the Republic of Guinea where he supports the Minister's efforts to improve cash management. Adam joined Treasury after spending six years at the Office of Management and Budget (OMB) as the Chief of the Financial Analysis and Systems Branch where he was responsible for policy development and oversight to implement financial systems, reduce improper payments, and right-size real property. Prior to OMB, he held senior leadership positions at Unisys and Andersen supporting financial management and system improvement efforts at Federal agencies. Adam began his career at the Defense

Logistics Agency. Adam holds a BA in Political Science and History from the University of Rochester and an MPA from the Maxwell School of Citizenship and Public Affairs at Syracuse University.

Mr. Charles D. Grimes III
Consultant

Charles (Chuck) Grimes is an independent consultant on HR policy and administration. He has worked with MTCI, a human capital management, training support and delivery, and program management firm; *The Public Manager*, a quarterly journal for public sector learning professionals; and the Departments of Justice, Defense, and Homeland Security. Chuck is active in the Partnership for Public Service's Strategic Advisors to Government Executives (SAGE) program in the COO and CHCO communities.

Chuck recently retired from Federal service, having served as the Chief Operating Officer for the U.S. Office of Personnel Management (OPM). In that role, he was responsible for managing OPM's human, financial, and other resources to achieve intended program results efficiently, economically, and effectively.

Previously, Mr. Grimes served as the Deputy Associate Director, Employee Services, and Acting Associate Director, Employee Services and Chief Human Capital Officer at OPM. In those roles, he managed governmentwide staffing, compensation, employee and labor relations, employee development, and executive resources policies; agency outreach and veterans support; and OPM's internal human resources operation. He also headed the Performance and Pay Systems center at OPM.

Prior to joining OPM, Mr. Grimes served as the Assistant Director, Compensation Policy, in the Internal Revenue Service's Strategic Human Resources Division. He spent most of his career in the Department of Defense (DOD), where he last served as the Director, Wage and Salary Division, in DOD's Civilian Personnel Management Service. Mr. Grimes received his B.A. in Biology from the University of Virginia and an M.A. in Management and Supervision from Central Michigan University.

Dr. Michael Holland

Vice Chancellor for Science Policy and Research Strategies
University of Pittsburgh

Mike's responsibilities as Vice Chancellor for Science Policy and Research Strategies include the development and implementation of University of Pittsburgh research policies and strategies to support cross-disciplinary research. This collaboration will include the sciences, medicine, engineering, information technology, humanities and creative arts, social sciences and innovation. The objectives include: the creation of major research initiatives; maintain and increase University research funding; and shape Pitt's response to changing research opportunities in support of its strengths and long-term goals.

Prior to coming to Pitt, Mike was the Executive Director at New York University's Center for Urban Science + Progress. CUSP is a graduate-level program in urban informatics that was announced in April 2012 as part of the Applied Sciences NYC initiative, the first class of 23 Master's students started in September 2013. In helping to design and build this new center, Mike oversaw day-to-day operations, including budget and financial planning, human resources, external relations, development, space planning and design, and strategic planning.

Mike was the Senior Advisor and Staff Director in the Office of the Under Secretary for Science at the Department of Energy. He helped design and execute the first ever Quadrennial Technology Review, which provides context and a framework for DOE's energy programs. He also staffed the Under Secretary on Department-wide executive boards, such as the Operations Management Council (DOE management issues), the Deputy Secretary's Resources Board (agency-wide budget formulation), and the Loan Guarantee Program's Credit Review Board (CRB), where he reviewed more than 25 loan guarantee applications for project readiness and technical eligibility.

At the Office of Management & Budget from 1999-2002 and 2007-2009, Mike was the program examiner for the Department of Energy's Office of Science, the Advanced Research Projects Agency-Energy (ARPA-E), Cerro Grande Fire Activity emergency funding, and DOE contractor pension liabilities. He has reviewed major scientific facilities, such as Brookhaven's National Synchrotron Light Source-II and SLAC's Linac Coherent Light Source, for inclusion in the President's budget. With Dave Trinkle, he developed the R&D Investment Criteria for basic research that were later incorporated into the Program Assessment & Rating Tool (PART).

Mike has also served as a senior policy advisor in the Office of Science & Technology Policy and on the staff of the House Science Committee, where his (minor) impact on the U.S. Code was the H-Prize Act of 2006 (enacted as Section 654 of P.L. 110-140). Mike has a Ph.D. in analytical chemistry from the University of North Carolina at Chapel Hill. His undergraduate degrees are in electrical engineering and chemistry from North Carolina State University.

Mr. E.J. ("Ned") Holland, Jr.

Retired Assistant Secretary for Administration
U.S. Department of Health and Human Services

With extensive, senior-level leadership experience in the public and private sectors, on multiple Boards of Directors, and in Fortune 500 environments, E.J. ("Ned") Holland, Jr. brings a depth and breadth of expertise across many functional areas and organizational levels. His comprehensive background in human capital management, executive compensation, change management, and organizational design, gives him a broad view of business, the ability to identify organizational issues, and insight into structure solutions and frameworks for executing tactical action plans.

In his most recent role as Assistant Secretary for Administration with the United States Department of Health and Human Services, Ned led and managed more than 3,500 Federal employees and contractors with multiple separate operating budgets totaling $1.4 billion. His responsibilities spanned Human Resources, Diversity Management, Equal Employment Opportunity, Facilities Management & Policy, IT, Business Transformation, Security (including Cybersecurity), and the HHS Program Support Center (the largest federal shared services organization). In this role, he executed the President's mandate to freeze and reduce the federal government's real estate footprint. Working with GSA he led the effort to consolidate the headquarters of 6 HHS operating divisions and 4 staff divisions into two locations, saving approximately $200M in rent and operating costs over the lease period and terminating 10 commercial leases. He also restructured the HHS Division of Administration; reduced executive headcount 30% by eliminating positions and transferring executives; reduced the number of his SES (Vice President) direct reports from 8 to 4, and made concomitant staff level changes, saving nearly $100 million

Prior to joining Health and Human Services, Ned was the Senior Vice President of Human Resources and Communications for Embarq Corporation, a $6 billion spin-off from Sprint Corporation and the then largest independent local telecommunications provider in the country. Ned was a primary leader in designing the structure and culture of Embarq from concept through launch. He served as primary management support to the Compensation Committee of the Board of Directors and played a key role in recruiting and compensation for the Embarq's executive leadership team.

From 1999 to 2006, Ned was Vice President of Compensation, Benefits, and Labor & Employee Relations for Sprint Corporation, where he served as Secretary to the Board's Compensation Committee. During his tenure with Sprint, he took their health care plan to market, restructured how health care was purchased, decreased the number of third-party HMOs from more than 75 to less than 10, produced immediate and short-term operating savings and reduced accrued balance sheet liability by approximately $300M.

Prior to Sprint, Ned served as Chief Administrative Officer and Corporate Secretary for Payless Cashways and was Managing Partner and Co-Chairman of the Health Care Practice at Kansas City law firm, Spencer Fane Britt & Browne.

In addition to his business career, Ned has served with numerous economic developments, community, and health care-related organizations. He helped to establish the Kansas Health Policy Authority, an independent authority Board charged with forming health care policy and administering $2.5 billion in health care purchasing for the State of Kansas. In that role, he served as Chair of the Finance and Audit Committee and Chaired the Search Committee for the Authority's first Chief Executive Officer. He was Secretary, President, and Chairman of the Board of Truman Medical Center, the Kansas City Missouri public hospital system. In addition, he was Chairman of

the Kansas City Area Hospital Association, and Board Member of Joint Commission Resources, the educational and consulting arm of the Joint Commission (formerly JCAHO).

Currently, Ned is retired and serves on three other boards. He holds a Juris Doctorate from Boston College Law School in Brighton, Massachusetts and graduated from Rockhurst College in Kansas City, Missouri with a Bachelor of Arts in Philosophy.

Ms. Jan E. Jones
Federal Senior Executive (Retired)

Ms. Jones is a 38-year veteran of the federal government, having held key leadership roles in the development and implementation of innovative administrative management systems, methodologies, and solutions for complex and rapidly changing organizations, mobilizing key resources in support of meeting mission goals through the effective integration of cross-cutting management initiatives within the agency's overall management plan and operational programs. Her career includes assignments in both line and staff positions within the executive and legislative branches of government spanning diverse operating environments such as research and development (R&D), facilities management, and law enforcement. Due to her diverse background and experience, she is frequently called on to advise top agency management—as well as to congressional entities and staff—in the identification, development, and execution of strategic and transformational efforts to effectively shape and achieve both operational and administrative goals and objectives of the subject organization.

Ms. Jones possesses specialized skills and experience in the areas of policy administration, communications, change management, strategic planning and program evaluation, force development, internal control systems, business process engineering, automated business systems acquisition, implementation, and management, corporate records management, law enforcement accreditation, human capital management and organizational design, civilian employee development and law enforcement career development.

Some of her notable career achievements include the development and management of an innovative, comprehensive, and integrated system of agency program planning, evaluation, and budget activities; the restructure and implementation of a new agency policy, directives, and internal communications system; the design and implementation of an updated, NARA-compliant agency-wide records management system; the attainment of successive Commission on the Accreditation of Law Enforcement Agencies (CALEA) accreditation awards (with honors); design of a progressive leadership development program for the supervisor-through-executive ranks; establishment of a new agency human capital office and leading the implementation of modernized HR practices, programs, and services; implementation of groundbreaking statutory requirements involving new pay and leave entitlements and programs; consultant to congressional committees on federal HR and HRIS; presenter at numerous national federal and private-sector conferences; management of acquisitions of major, multi-million dollar business systems and modernization

initiatives; leading seven different migrations of separate agency personnel/payroll/finance functions and systems into a single, integrated management system, on-time and within budget; and the development and conduct of a national HRIS training program.

Ms. Jones' professional work history consists of the United Stated Capitol Police from 1995 – 2013, where she served as Director, Office of Policy and Management Systems, the Director, Office of Human Resources, and the Associate Director, Office of Information Systems. The Architect of the Capitol from 1991 – 1995 where she served as a special assistant to the Chief Administrative Officer, and a Branch Chief in the Human Resources Division. The U.S. Department of Commerce, Office of the Secretary, from 1985 – 1991, and the U.S. Department of Commerce, Boulder Laboratories, from 1976 – 1985 where she served in various functions as a Personnel Management Specialist.

Ms. Jones is the recipient of numerous awards and recognition throughout her federal career, to include the DoC's Assistant Secretary for Administration's award for Outstanding Administrative Management, the DoC Silver Medal award, and numerous sustained superior performance and special act or service awards. While at the USCP, she was the recipient of the Chief's award for Outstanding Administrative Management, a Meritorious Service Award, the USCP Distinguished Service Award, and an official recognition of appreciation for services rendered to the U.S. House of Representatives from the Chief Administrative Officer of the House.

Mr. John M. Kamensky
Senior Fellow
IBM Center for The Business of Government

Mr. Kamensky is a Senior Fellow with the IBM Center for The Business of Government in Washington, DC, which sponsors research on management challenges facing government leaders.

During 24 years of public service, he had a significant role in helping pioneer the U.S. federal government's performance and results orientation. He is passionate about creating a government that is results-oriented, performance-based, customer-focused, and collaborative in nature. Prior to 2001, Mr. Kamensky served for eight years as deputy director of Vice President Gore's National Partnership for Reinventing Government. Before that, he worked at the U.S. Government Accountability Office for 16 years where he played a key role in the development and passage of the Government Performance and Results Act of 1993.

During his time with the IBM Center, he has edited or co-authored eight books and writes and speaks extensively on leadership, performance management, collaborative governance, and government reform.

Mr. Kamensky is a fellow of the National Academy of Public Administration and a senior fellow with the Administrative Conference of the United States.

He received a Masters in Public Affairs from the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin, and a Bachelors of Arts in Government at Angelo State University, in San Angelo, Texas.

Ms. Rachel Elizabeth Levinson
Executive Director, National Research Initiatives
Arizona State University

A twenty five-year veteran of science policy at the national level, Rachel Levinson is the Executive Director of National Research Initiatives for Arizona State University, operating in the university's Washington, D.C. office. She came to ASU in 2005 as the director of the Government and Industry Liaison Office for the Biodesign Institute at Arizona State University. Levinson heads an office responsible for developing policies and strategies that advance the University's research agenda.

Prior to coming to ASU, Levinson was with the Office of Science and Technology Policy in the Executive Office of the President of the United States, where she was the assistant director for life sciences, while on detail from the Office of the Director of the National Institutes of Health. In this capacity, she identified science and technology priorities, developed and advocated Administration objectives, and resolved policy issues in life sciences focusing on laboratory biosecurity, bioterrorism preparedness, biotechnology, biomedical research and technology development and transfer.

Levinson began her career as a biologist for the National Cancer Institute within the National Institutes of Health (NIH) and later moved into the policy arena. She advanced to positions at NIH including deputy director of the NIH Office of Recombinant DNA and senior policy advisor in the Office of Technology Transfer.

Levinson earned her B.S in Zoology from the University of Maryland at College Park, and her M.A in Science, Technology and Public Policy from George Washington University, School of Public and International Affairs.

Dr. Joseph P. Mitchell, III
Director of Strategic Initiatives

National Academy of Public Administration

Joe Mitchell is Director of Strategic Initiatives at the National Academy of Public Administration—an independent, nonpartisan, and nonprofit organization chartered by the U.S. Congress to improve government performance. In this role, Dr. Mitchell leads the organization's Grand Challenges in Public Administration program, which is identifying and developing ways to address the most challenging issues facing government today. He also advances cutting edge thought leadership and develops partnerships with other good government groups, American universities, and universities in other countries.

Over the course of his career, he has worked with a wide range of federal cabinet departments and agencies to develop higher-performing organizations, implement organizational change, and strengthen human capital and teams. Most recently, he was at the General Services Administration to stand up its new Office of Shared Solutions and Performance Improvement within the Office of Government-wide Policy. As an Associate Director of this new office, he built and led a team to manage multi-functional and cross-agency projects and initiatives in support of the President's Management Agenda. His team established governance and accountability mechanisms for federal Cross-Agency Priority Goals, revamped performance.gov to become more user-friendly and provide additional information to the public, upgraded and expanded the White House Leadership Development Program and CXO Fellows program, provided technical and management support to the federal executive management councils, and established a procurement vehicle that federal agencies can use to acquire commercial software-as-a-service capabilities for their payroll and work schedule/leave management.

Previously, Dr. Mitchell led and managed the National Academy of Public Administration's organizational studies program, overseeing all of its congressionally-directed and agency-requested reviews and consulting engagements. He has served as project director for studies of the Government Publishing Office, the U.S. Senate Sergeant at Arms, the U.S. Agency for International Development, the National Park Service's Natural Resource Stewardship and Science Directorate, and the Natural Resources Conservation Service at the U.S. Department of Agriculture.

He holds a Ph.D. from the Virginia Polytechnic Institute and State University, a Master of International Public Policy from the Johns Hopkins University School of Advanced International Studies, a Master of Public Administration from the University of North Carolina at Charlotte, and a B.A. in History from the University of North Carolina at Wilmington. He is a member of Phi Kappa Phi, the national academic honor society; Pi Alpha Alpha, the national honor society for public affairs and administration; and the American Society for Public Administration.

Ms. Kim Moreland
Associate Vice Chancellor, Director
University of Wisconsin - Madison

Kim Moreland is the Associate Vice Chancellor for Research and Sponsored Programs at the University of Wisconsin - Madison. She has an MBA from the University of Kansas.

Kim is on the Board of Directors of the Council on Governmental Relations and serves as chair of the Costing Policies Committee. She is also on the Board of the Federal Demonstration Partnership and serves as chair of the Finance Committee. She is a lecturer for Johns Hopkins University in the Master's degree program in Research Administration.

Kim has served as a member of the National Council of University Research Administrators (NCURA) national and international teaching faculty and the national peer review faculty. She is a recipient of NCURA's national Award for Distinguished Service in Research Administration and the Award for Outstanding Achievement in Research Administration. She is a former president of NCURA, and she currently chairs the NCURA Select Committee on Global Affairs.

Mr. John M. Palguta
Adjunct Professor (Retired)
Georgetown University
Vice President for Policy (Retired)
Partnership for Public Service

John Palguta is a former adjunct professor in Georgetown University's McCourt School of Public Policy, where for ten years he taught a graduate seminar titled, "Effective People Management in Government." John is also a former Vice President for Policy at the Partnership for Public Service, a non-profit, non-partisan organization dedicated to meeting the workforce needs of government by inspiring a new generation to serve and transforming the government workplace. Prior to his retirement from the Partnership in February 2106, John had responsibility for a comprehensive program of review and analyses of the human resource management issues in the federal government. John was also instrumental in setting up the Partnership's *Best Places to Work* rankings initiative first issued in 2003 and had been involved until his retirement. He also managed the Partnership's *Federal Human Capital Collaborative*, a consortium of 33 federal departments and agencies of which the National Science Foundation is a member.

Prior to joining the Partnership in December 2001, John was a career member of the federal senior executive service and Director of Policy and Evaluation for the U.S. Merit Systems Protection Board (MSPB), the culmination of a federal career spanning almost 34 years devoted to federal human resources management and public policy issues. He is a recipient of the MSPB's Theodore Roosevelt Award, the agency's highest honor. John previously held positions in the U.S. Office of Personnel Management and the U.S. Civil Service Commission.

John received a B.A. degree in Sociology from California State University at Northridge and a Master of Public Administration degree from the University of Southern California. He is a Fellow of the National Academy of Public Administration; a former Vice President for the Coalition for Effective Change; a past President of the Federal Section of the International Public Management Association for Human Resources (IPMA-HR); and an adjunct professor at Georgetown University's McCourt School of Public Policy. He received the 2006 Warner W. Stockberger award which is the highest honor presented annually by IPMA-HR to recognize an individual who has made outstanding contributions in the field of public sector HR management.

Dr. Theresa A. Pardo
Director, Center for Technology in Government
University at Albany

Theresa A. Pardo, Ph.D., serves as Director of the research institute CTG UAlbany at the University of Albany, State University of New York. She is also a full research professor in Public Administration and Policy at Rockefeller College of Public Affairs and Policy. Under her leadership, CTG UAlbany works closely with multi-sector and multi-disciplinary teams from the U.S. and around the world to carry out applied research and problem solving projects focused on the intersections of policy, management, and technology in the governmental context. CTG UAlbany has broken ground in information and knowledge sharing, smart cities, open government and open data, e-government, social media policy, and mobile technologies and human services delivery.

Dr. Pardo serves as OpenNY Adviser to New York State's Governor Andrew Cuomo and is Chair of the U.S. Environmental Protection Agency's National Advisory Committee. She serves as a member of the User Working Group of the NASA Socioeconomic Data and Applications Center (SEDAC), the Business and Operations Advisory Committee of the U.S. National Science Foundation and the Steering Committee of the U.S. National Science Foundation funded North East Big Data Innovation Hub. Dr. Pardo is founder of the Global Smart Cities Smart Government Research Practice Consortium and has served on numerous UN Expert Groups on a range of digital government and sustainable development related issues.

In 2019 Dr. Pardo was elected a Fellow of the National Academy of Public Administration. She serves as an International Advisor to the E-Government Committee for the China Information

Association and in 2016, served as the first female Chair of Oman's Excellence in E-Government Award Jury. Dr. Pardo is also a member of the Series Steering Committee for the International Conference on Theory and Practice of Electronic Governance (ICEGOV), a United Nations University initiative. She is a Past-President of the Digital Government Society.

Dr. Pardo serves on a number of editorial boards for top journals in the fields of digital government and public administration including Government Information Quarterly and Public Management Review. She is co-developer of the top ranked academic program in Government Information Strategy and Management offered by Rockefeller College at the University at Albany, has published over 200 articles, research reports, practice guides, book chapters and case studies and is ranked among the top five scholars in her field in terms of productivity and citations to her published work.

In 2018 and 2019, Dr. Pardo was named as one of the Top 100 Influencers in Digital Government globally. In 2019 she received the Distinguished Service Award from the Digital Government Society. She is a recipient of Government Technology Magazine's Top 25 Doers, Drivers, and Dreamers Award which recognizes individuals throughout the U.S. who exemplify transformative use of technology that is improving the way government does business and serves its citizens. Dr Pardo is a recipient of the University at Albany's Distinguished Alumni Award, the University at Albany's Excellence in Teaching Award, and the Rockefeller College Distinguished Service Award.

Pardo holds a Ph.D. in Information Science from the University at Albany, SUNY.

Dr. Susan Wyatt (Sedwick) Linehan
Senior Consulting Associate
Attain, LLC

Dr. Susan Wyatt (Sedwick) Linehan is a senior consulting associate for Attain, LLC with over 24 years of experience in research administration. She retired in 2015 as an associate vice president for research and director of the Office of Sponsored Projects at The University of Texas at Austin, where she was responsible for both pre- and post-award financial administration units with oversight of over $630 million in annual sponsored projects expenditures. Prior to her tenure at UT Austin, she served in a similar capacity at the University of Oklahoma, Norman, where she also had responsibility for research compliance. She received her Ph.D. in Higher Education Administration from Texas A&M University and is a Certified Research Administrator (CRA). Her previous academic appointments include serving as a clinical professor in the Department of Educational Administration for the Higher Education Administration Program at The University of Texas at Austin and as an adjunct professor for Johns Hopkins University, Rush University in Chicago and The University of Oklahoma, Norman. Dr. Sedwick is a frequent speaker on the topic of research data security, export controls as they apply to universities, human capital development, and strategic planning. She authored the chapter on export controls included in the NCURA/AIS

publication, *Sponsored Research Administration: A Guide to Effective Strategies and Recommended Practices.*

Dr. Sedwick served as chair of Phase V of the Federal Demonstration Partnership (FDP), as a member of the initial strategic planning committee and as co-chair of the Membership Committee. She was active in the Council on Governmental Relations (COGR) having served on the Board of Directors, Research Compliance and Administration and Contracts and Intellectual Property Committees, Uniform Guidance working group, nominating committee and chair of the export controls working group. She was a co-chair for the annual international meeting of the Society for Research Administrators International (SRAI) held in Vancouver, British Columbia, Canada in October 2017, is a member of the SRAI Board of Directors, Speakers Bureau, and received SRA International Distinguished Faculty Designation in 2017. She received the National Council of University Research Administrators (NCURA) Distinguished Service award in 2012 and the NCURA Region V Distinguished Service Award in 2014. She has served that organization as an at-large representative to the national Board of Directors, as chair of the Professional Development Committee, as a member of the Nominating and Leadership Development Committee and as a contributing editor for NCURA Magazine.

She is a graduate of Leadership Texas, a past trustee for the Texas A&M University-Kingsville Foundation, and founding president of the FDP Foundation. She is co-chair of the National Science Foundation Business and Operations Advisory Committee. She was recognized as the 2012-2013 distinguished alumnae by the Texas A&M University-Kingsville Dick and Mary Lewis Kleberg College of Agriculture, Natural Resources and Human Sciences Hall of Honor.

Ms. Pamela A. Webb
Associate Vice President for Research
University of Minnesota

Pamela A. Webb is the Associate Vice President for Research at the University of Minnesota. In this capacity, she is responsible for pre-award and post-award non-financial services supporting about $863M in research awards annually, as well as negotiation of F&A rates, effort reporting, and research policy and education. Prior to her appointment at the University of Minnesota in 2007, Pamela led pre-award and post-award administration in the Office of Sponsored Research at Stanford University. Pamela has been involved in research administration for 35 years, including 12 years at the University of California-Los Angeles as well as UC Santa Barbara, Northwestern University, and Stanford.

Pamela has served as a national officer of her professional association (the National Council of University Research Administrators, NCURA) and served two terms on NCURA's Board of Directors. In 2009, she received NCURA's *Distinguished Service* award, and in August 2016, she received NCURA's highest honor, the *Outstanding Achievement in Research Administration Award*.

She currently chairs the Council of Governmental Relations Board of Directors, and previously served as chair of their Research Compliance and Administration Committee. She has co-chaired a national conference on Electronic Research Administration; serves as a reviewer for NCURA's Peer Review program; and as faculty for their national Leadership Workshop. Pamela previously served on the Federal Demonstration Partnership Executive Committee and currently co-chairs their Expanded Clearinghouse initiative (an institutional profile system designed to expedite subaward risk assessment and monitoring.) Pamela is a frequent presenter at the national and regional level, specializing in subawards, policy development and deployment, as well as helping research administrators learn the complex regulatory environment.

Dr. Douglas W. Webster
Retired, Chief Financial Officer
U.S. Department of Education

Doug Webster has over 20 years of experience focused on federal financial management, risk management, strategic planning, cost management, and process improvement. He began his professional career by serving 21 years in acquisition management and flight operations as a US Air Force officer. He then entered management consulting and has provided nearly 20 years of advice and support to over two dozen federal and state agencies. In 2004, he served with the DoD Coalition Provisional Authority as the Principal Finance Advisor to the Iraq Ministry of Transportation, thereby serving as the de facto CFO of a ministry of nearly 40,000 employees. In 2007, Doug was appointed as the Chief Financial Officer of the US Department of Labor. He subsequently entered the Senior Executive Service and served as the Deputy Director of the DoD Business Transformation Agency. Most recently, he was appointed in 2017 as the CFO of the US Department of Education.

Doug co-founded the Federal ERM Steering Group in 2008, which led to the annual Federal ERM Summits from that year since. In 2011 he led the founding of the Association for Federal Enterprise Risk Management (AFERM) and then served two terms as the association's first president. In 2012 he was elected a Fellow of the National Academy for Public Administration. In 2014 he joined the George Washington University Center for Excellence in Public Leadership as a Senior Fellow, where teaches courses in the Enterprise Risk Management certificate program. He also serves on the board of directors of the Pentagon Federal Credit Union, a $17B financial services organization with over 1,200,000 members, and chairs the board risk management committee. He additional serves on the board of the PenFed Foundation, a charitable organization dedicated to helping our nation's veterans, wounded warriors, and their families.

Doug has a BS in Engineering, a MS in Systems Management, and a Doctorate in Business Administration. He is a co-author of the books *Activity Based Costing and Performance* (AMS, 1994), *Chasing Change: Building Organizational Capacity in a Turbulent Environment* (Wiley and Sons, 2009), and *Managing Risk and Performance: A Guide for Government Decision Makers* (Wiley and Sons, Feb. 2014). He is also co-author of *Improving Government Decision Making through Enterprise Risk Management* (IBM Center for the Business of Government, 2015).

Committee on Equal Opportunities in Science and Engineering (CEOSE) Liaison to the NSF Advisory Committee on Business and Operations:

Dr. Alicia J. Knoedler
Director of Team Innovation
Exaptive, Inc.

Dr. Alicia J. Knoedler is Director of Team Innovation at Exaptive, Inc. Exaptive is an innovation and software solutions startup company based in Oklahoma City, Oklahoma with a platform (Cognitive City) to bring together people, data, and analysis tools to form collaborative communities and encourage boundary crossing behavior in an actively-supported environment. Dr. Knoedler designs and implements the composition and engagement of teams within Exaptive's Cognitive Cities. She also identifies and characterizes unique roles within research teams to determine how role contributions can be measured and attributed within virtual teams.

Prior to joining Exaptive, Dr. Knoedler was the Executive Associate Vice President for Research and Executive Director of the Center for Research Program Development and Enrichment at the University of Oklahoma. Within these roles, she worked with university leaders, faculty, students, and other investigators to significantly enhance the research enterprise, focusing on changing the research culture as well as assisting investigators in their efforts to develop more competitive research programs and proposals for external funding. Dr. Knoedler is a member of the NSF Business and Operations Advisory Committee as a liaison from the NSF Committee on Equal Opportunities in Science and Engineering (CEOSE), drawing a connection between the Foundation's commitment to broadening participation and the commitment to broadening participation from external audiences across the nation.

Dr. Knoedler holds a B.A. in psychology from Trinity University (San Antonio), and an M.S. and Ph.D. in cognitive psychology from Purdue University. Her research expertise focused on various memory processes and optimal conditions for remembering. She taught quantitative research methodology, statistics, and grant writing for many years at Purdue University, San Jose State University, University of California Santa Cruz, Indiana University, University of Notre Dame, and Penn State University and had an appointment as Adjunct Associate Professor in the Department of Psychology at OU. Dr. Knoedler has over 19 years of experience in developing grant proposals for a variety of funding sources, including federal sources, private foundations, and corporations and is a Certified Research Administrator (CRA). From 2014-2018, Dr. Knoedler was is the Co-PI of Oklahoma's NSF EPSCoR Research Infrastructure Improvement Track 1 award, which focuses on the socio-ecological approaches to studying climate variability in Oklahoma.

In service and leadership to research development and the national research enterprise, Dr. Knoedler is a founding member, former member of the Board of Directors, and has been president (2013-2014) and immediate past-president (2014-2015) of the National Organization of Research Development Professionals (NORDP). She is also a member of APLU's Council on Research, through which she develops and offers training, professional development, and leadership opportunities for senior research leaders across the nation.

Spring 2019 **Recommendations from the Business and Operations Advisory Committee**

Title	Meeting Date	Fiscal Year	Recommendation	NSF Contact(s)	Status	Explanation/Outcome	Theme
Cost Surveillance of Major Facilities – Implementing the Subcommittee Report Recommendations	Spring 2019	FY19	Large Facilities Cost Surveillance Subcommittee determined adequate current policies to assure proper cost surveillance and recommended: (1) Consolidate manuals, standard operating guidance, policies and procedures into a unified document by topics to remove confusion and inconsistencies; (2) Review cost estimating areas to improve hierarchy of preference to estimate methodology, strengthen documentation by NSF evaluators around the Cost Proposal Review Document (CPRD), and provide reasons for CPRD approval or changes; (3) Develop Independent Cost Estimates and Schedule Estimates early in process to inform trade-offs and scope reduction; (4) Improve traceability and accountability of non-negotiable science and technical requirements; (5) Establish a mechanism to addresss “unknown-unknowns”; and (6) Establish core competencies of Recipient staff given project's magnitude/complexity. Large Facilities NAPA Implementation update (NSF response) noted NSF efforts are appropriate and thorough with the exception of the implementation tasks underway.	Hawkins, Matthew Ulvestad, James	Completed	NSF concurs with all Subcommittee recommendations and recognizes the importance of high-quality estimating and oversight in successfully supporting the science mission. Internal Standard Operating Guidance has been updated or created and the externally-facing Major Facilities Guide (MFG) has been updated to further strengthen estimates and oversight. Individual Standard Operating Guidance may eventually become combined into an internal manual. NSF has discussed with the National Science Board the agency’s handling of the potential cost impacts of “unknown-unknowns” in relation to the No Cost Overrun Policy and minor revisions to current practice have been made in the MFG. Inclusion of "managemement reserve" will remain rare, but the need for a science/cost trade study and the ability to increase TPC have been clarified. Core competency guidance has been developed for award Recipients and will be included in an update to the MFG in FY2020.	Advice on Cost Surveillance of Major Facilities
Government Shutdown Lessons Learned	Spring 2019	FY19	After experiencing the longest lapse in appropriations (government shutdown) in US history, staff are working to revise required lapse contingency plans and processes. Considerations for the plan include: - distinguishing between partial and full shutdowns, - determining how to deal with people on leave, travel, or transitioning out of NSF, - improving communication before and during any future lapse, - determining how to handle awards that expire during the lapse, - formulating better reopening procedures to maximize recovery in terms of payroll for staff, paying of invoices and restoring drawdowns, -allocating contingency fund in future budgets to address a shutdown aimed at accelerating recovery and minimizing damage to the mission of the NSF, -preparing a statement on the difficult-to-quantify loss in human effort associated with the shutdown such as carrying out projects and experiments, actions taken on grant proposals, work that changed careers	Coughlin-Piester, Janis Inclán, Javier	Completed-partially implemented	Will continue to review and revise as appropriate in advance of future potential lapses.	Advice on Government Shutdown Lessons Learned
Workforce Strategy Approaches at NSF	Spring 2019	FY19	Need for everyone, especially executive leadership, to be engaged in the strategic vision for intended results driving the future. Training may help executives see the value of strategy and develop a plan for every employee in the organization. Need to determine which positions are mission-critical, while treating all employees as critical to the organization. Determine what skills are needed for where you want to go over the next 10 or 15 years, move all support functions to shared services, and focus on bigger ideas as you evolve. Find a good balance with tools such as flexible practices for Rotators, who often bring wealth of knowledge. A 3 to 5-year outlook should be part of the plan.	Malyszka, William Radford, Allison	In Progress	The HRM Division Director shares ownership for the Renewing NSF goal on Adapting the Workforce to the Work with a Deputy Assistant Directore from a science directorate. They are planning broad stakeholder engagement across all levels of the organization over the next couple years to advance development of positions aligned to emerging mission needs, accompanying competency models, and career path navigation tools. In addition, a PMIAA effort to assess the competencies of large facilities teams within NSF includes engagement of the DADs.	Advice on Workforce Strategy Approaches at NSF

Office of Budget, Finance, and Award Management (BFA) Update
B&O Advisory Committee Meeting Fall 2019
(November 25, 2019)

Topics:
- BFA Senior Staff Changes
- FY 2019 Financial Statement Audit
- FY 2019 Agency Financial Report
- Management Challenges: FY 2019 and FY 2020
- Digital Accountability and Transparency Act
- Government Accountability Office Review of NSF Major Facilities Projects
- Program Management Improvement Accountability Act
- Enterprise Risk Management
- Government Invoicing
- Unique Entity Identifier Initiative
- Performance
- FY 2020 Appropriations
- FY 2021 Budget Request to Congress

- **BFA Senior Staff Changes**
  - *Division of Financial Management (DFM)* – Chris Berner is Acting Branch Chief, Cash Management Branch, taking over after the previous Acting Branch Chief, Mike Howe.
  - *Division of Institution and Award Support (DIAS)* – Alex Wynnyk was appointed the Deputy Division Director, DIAS, in May. Most recently, Alex had served as the Senior Advisor for Oversight in DIAS. Michael Howe was selected replace Alex Wynnyk as Senior Advisor for Oversight in the DIAS Front Office.

- **FY 2019 Financial Statement Audit**
  On November 14, 2019, the OIG audit contractor Kearney & Company (Kearney) issued its Independent Auditor's Report on NSF's FY 2019 financial statements. For the 22nd consecutive year, NSF achieved an unmodified (clean) audit opinion on its financial statements. This accomplishment includes the continuation of no material weaknesses or significant deficiencies in NSF's internal control over financial reporting. The Independent Auditor's Report is in Chapter 2 of NSF's FY 2019 Agency Financial Report. https://www.nsf.gov/pubs/2020/nsf20002/pdf/07-chap2-financials.pdf.

- **FY 2019 Agency Financial Report (AFR)**
  NSF's FY 2019 Agency Financial Report focuses on financial management and accountability and was published on November 19, 2019. The AFR is at this link:
  https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf20002.

- **Management Challenges: FY 2019 and FY 2020**
  BFA finalized NSF's Progress Report on addressing the FY 2019 Management Challenges, and OIG shared the FY 2020 Challenges with NSF on October 15th, having received agency input in July through NSF's draft progress report from last fiscal year. These documents are included in the appendices of NSF's FY 2019 Agency Financial report.

For FY 2020, the OIG removed one challenge, Eliminating Improper Payments. An additional challenge on Foreign Government Talent Recruitment Programs was added that had been an emerging challenge area in the FY 2019 report. The emerging challenge provided NSF with notice and an opportunity to undertake responsive actions before the OIG decided to elevate the issue to a standalone Management Challenge for FY 2020. To that end, in consultation with the OIG's Office of Investigations, NSF initiated actions in FY 2019, with actions also planned for FY 2020, directed to concerns arising from foreign government talent programs. NSF forwarded a summary of these actions to the OIG on October 22nd, along with the FY 2019 Progress Report. The OIG also identified a new "emerging challenge," managing the enterprise-wide internal control environment, focused around increasing agency-wide collaboration toward integrating a risk-based approach towards meeting strategic, operational, reporting, and compliance objectives.

The FY 2020 Management Challenges are:

1) Managing Major Multi-User Research Facilities
2) Meeting *Digital Accountability and Transparency Act of 2014* (DATA Act) Reporting Requirements
3) Managing the *Intergovernmental Personnel Act* (IPA) Program
4) Managing the U.S. Antarctic Program
5) Encouraging Ethical Conduct of Research
6) Mitigating Threats Posed by Foreign Government Talent Recruitment Programs

Emerging:
Managing the Enterprise-wide Internal Control Environment

- **Digital Accountability and Transparency Act (DATA Act)**

In FY 2019, the NSF OIG and GAO reviewed NSF's FY 2019 reporting under the DATA Act. The OIG's audit was conducted by its audit contractor, Kearney & Co., and on Friday, November 8th, NSF received Kearney's final report. NSF was provided the opportunity to respond to the findings, and the agency response is incorporated in the final report.

NSF calculated its error rates at 0.04% for completeness, 0.07% for accuracy and 1.73% for timeliness. Kearney calculated NSF's error rates at 57.5% for completeness, 57.5% for accuracy and 57.7% for timeliness.

NSF, OIG, and Kearney agreed that the majority of the audit discrepancies resulted from NSF's interpretation of DATA Act reporting guidance which differed from Kearney's interpretation, and that absent this difference, NSF's presumed error rate would likely be minimal. BFA received concurrence from the Office of Management and Budget (OMB) and the Department of Treasury supporting NSF's interpretation.

NSF and OIG staff demonstrated outstanding collaboration and will continue to seek to reach concurrence and common understandings, and already have a meeting scheduled to agree on next steps to resolve these discrepancies.

GAO released its report, *DATA ACT: Quality of Data Has Improved, but Action is Needed to Improve Completeness and Accuracy and to Better Disclose Known Data Limitations (GAO-20-75, JC 103184)*, on November 8th. The report mentions NSF by way of an example of agencies needing to report an award's primary place of performance for projects with distributed locations, e.g., research vessels or

distributed sensor networks. NSF worked collaboratively with GAO throughout the review and declined the opportunity to comment on the draft.

- **Government Accountability Office (GAO) Review of NSF Major Facilities Projects**

  FY 2018/2019 GAO Review

  In March 2019, GAO issued its final report: National Science Foundation: Cost and Schedule Performance of Large Facilities Construction Projects and Opportunities to Improve Project Management (GAO 19-227) in compliance with Congressional direction (Senate Report 114-239 and House Report 114-605) that requires GAO to annually report on major research equipment and facilities construction at NSF.

  In mid-July, NSF's corrective action plan was finalized and sent to GAO and Congress. Implementation of corrective actions is underway.

  FY 2019/2020 GAO Review

  The engagement with GAO on major facilities oversight continues based on Congressional report language (Senate Report 115-275 and House Report 114-605) and will evaluate the following:

  1) Comparison of the cost and/or schedule estimates for one or more large facilities projects under construction with GAO best practices for cost or schedule estimating.
  2) Assessment of the earned value management data for one or more large facilities projects under construction.
  3) Review NSF plans for mid-scale research infrastructure investments under the Major Research Equipment and Facilities Construction account.

  The next GAO report is expected in March 2020.

- **Program Management Improvement Accountability Act (PMIAA)**

  NSF submitted its PMIAA Implementation Plan in November 2018 and remains engaged with OMB in providing Earned Value Management metrics for NSF's major facilities projects in support of a federal project status dashboard pilot. In late September 2019, NSF let the contract to conduct the workforce analysis that will help identify necessary proficiency levels and address any competency gaps on the Integrated Project Teams which is comprised of NSF staff directly engaged in major acquisition and major facilities oversight. NSF intends to leverage OPM's competency model and program management job "identifier" when available. This effort aligns well with GAO report recommend-ations from the GAO review of major facilities oversight (see related *GAO Review of NSF Major Facilities Projects* item above). Once the major facility/acquisition portfolio has been addressed, the agency will begin considering the science portfolios based on priorities now under discussion with OMB through the Program Management Policy Council.

  NSF's 2019 strategic review included an evaluation of continuity of operations and maintenance (O&M) funding for major facilities as part of PMIAA's annual portfolio review requirement. The outcome was a policy memo from the CFO to ensure at least three months of funding obligated to all major facility O&M awards when there is a potential for interruption in the ability to obligate and draw down funds, such as the end of the fiscal year or potential lapses in appropriations.

  Background: In December 2016, the PMIAA was signed into law. PMIAA aims to improve program and project management practices within the Federal Government. PMIAA requires that agencies conduct annual portfolio reviews to ensure major programs are being managed effectively, and

that OMB conduct reviews of areas identified by GAO as "high risk." OMB's current portfolio focus is on major acquisitions, and NSF currently has no "high risk" portfolios.

- **Enterprise Risk Management (ERM)**

  NSF continued to mature its ERM Program. NSF expanded its risk reporting to better articulate the agency's risk appetite as a continuum that guides decision making on allocating risk management resources and efforts. The agency integrated risk management practices are in a range of risk categories from strategic and operational risk, to financial and compliance risk. Most significantly NSF used the OMB shifting from low to high value policy direction to seize risk opportunities in areas such as shared services, robotic processing automation innovation, and leveraging data as a strategic asset. NSF leveraged OMB A-123 and COSO's Relationship Between Internal Controls and ERM implementation guidance. In FY 2019, the financial statement auditors did not find instances of non-compliance. In addition, the agency implemented its Data Quality Plan, as required by OMB Circular No. A-123, Appendix A, Management of Reporting and Data Integrity Risk (see related DATA Act item above).

- **Government Invoicing (G-Invoicing)**

  G-Invoicing is the Government's long-term sustainable solution to improve the management and accounting of Interagency Agreements (7600 A/B, MIPR, 1611). G-Invoicing impacts NSF's Incoming and Outgoing Interagency Agreements, and will provide an online, user-friendly platform to support the management and transparency of these agreements. G-Invoicing aligns with the Renewing NSF initiative's pillars: making information technology work for all; and streamlining, standardizing, and simplifying processes and practices.

  DFM has established a G-Invoicing project team which is comprised of staff across BFA and the Office of Information and Resource Management (OIRM) to support in the initiation, design, and deployment of G-Invoicing. In addition, a G-Invoicing Stakeholders Working Group was formed to engage Directorate program staff throughout the project. A kickoff meeting with the working group was held on Wednesday, November 20, 2019.

  Treasury has mandated all Federal Agencies, participating in Buy/Sell activity, to implement G-Invoicing by June 30, 2021.

- **Unique Entity Identifier (UEI) Initiative**

  All organizations that do business with the government register with a centralized system called the System for Award Management (SAM). All federal agencies use SAM for managing awards, reporting information, and making payments. Currently, SAM uses the proprietary Dun & Bradstreet Data Universal Numbering System (DUNS number) to organize this information. GSA is replacing the proprietary DUNS number with a government-owned number called the UEI. The transition to the UEI is slated for December 2020; and it will impact centralized systems, like SAM, and agencies' systems that use organization identifiers. NSF is working closely with the federal community on how to meet this challenging deadline.

- **Performance**

Priority Goals

The FY 2018 - 2019 Priority Goal, "Expand public and private partnerships," achieved its target to increase formal partnerships with external U.S. entities by 5 percent over the FY 2017 baseline. Details will be released next week (December 19) on performance.gov. The FY 2020-2021 Priority Goals are currently being negotiated with OMB. They will be announced in February 2020 concurrent with the Budget Request to Congress.

FY 2019 Strategic Reviews and OMB Annual Management Meeting

NSF conducted Strategic Reviews of two areas in FY 2019, the modernization of the Merit Review Report and the codification of funding continuity practices for the major facilities portfolio. Results were discussed in a meeting with OMB in late June. Findings and recommendations from the Reviews have already been implemented within NSF for both two topic areas.

Performance Integration with Other Processes

The Performance team works with the agency teams responsible for the implementation of ERM, PMIAA, and the Foundations for Evidence-Based Policymaking Act of 2018. Guidance for these activities all require coordination with the performance function. ERM is institutionally housed within BFA, Evaluation is institutionally housed within OIA, and PMIAA is housed within both OIA and BFA. The Performance team works with each of the three implementation teams to ensure that guidance is followed without undue burden on staff. Most recently in this integration, in FY 2019, OMB issued guidance on portions of the Evidence Act, and guidance is also forthcoming on how to align its requirements with GPRA. PIO staff is working with the Evaluation Officer's staff in OIA to fulfill requirements.

- **FY 2020 Appropriations**
  - The current FY 2020 Continuing Resolution goes through December 20, 2019.
  - The House and Senate have both marked up their versions of the Commerce, Justice, Science and Related Agencies (CJS) Appropriations Bills.
    - CJS Bill language was received from the House of Representatives in May 2019.
    - CJS Bill language was received from the Senate in September 2019.
    - The Senate passed H.R. 3055 on October 31, 2019. This is a "mini bus" bill that provides funding for the CJS, Agriculture, Rural Development, FDA, Interior, Environment, Transportation, and Housing and Urban Development appropriations.
  - Noteworthy items from report language:
    - Supports NSF's overall investments
    - Preserves flexibility in directorate allocations
    - Tools to "drive NSF's long-term research agenda and investment in fundamental research" in Senate language
  - $1.1 billion to $1.44 billion in Research & Related Activities (R&RA) above FY 2020 Request
    - $265 million to $602 million in R&RA above FY 2019 Current Plan
    - Big Ideas
    - Two convergence accelerators
  - Strong support for Major Research Equipment & Facilities Construction (MREFC)
    - Both sides fully fund, as requested, Antarctic Infrastructure Modernization for Science, the Large Synoptic Survey Telescope, and the High Luminosity-Large Hadron Collider

- Senate increases funding for Mid-scale Research Infrastructure by +$30 million, to a total of $75 million
- Continued emphasis on broadening participation in Education and Human Resources (EHR)
  - Support for STEM Education pre-K through grade 12
  - Support for education, teacher development, and undergraduate instruction

- House vs. Senate comparisons to the FY 2020 Request and the FY 2019 Plan are in the table below.

National Science Foundation
FY 2020 House & Senate Marks
(Dollars in Millions)

Account	FY 2019 Plan	FY 2020 Request	FY 2020 House Mark	FY 2020 Senate Mark	House Mark over Request	Senate Mark over Request
RRA	$6,505	$5,663	$7,106	$6,770	$1,443	$1,107
EHR	922	823	950	937	127	114
MREFC	296	223	223	253	-	30
AOAM	333	337	337	337	-	-
NSB	4	4	4	5	0.3	0.4
OIG	15	15	15	16	-	0.4
Total	**$8,075**	**$7,066**	**$8,636**	**$8,317**	**$1,570**	**$1,251**

Totals may not add due to rounding.

➢ **<u>FY 2021 Budget Request to Congress</u>**
- NSF submitted the FY 2021 Budget Submission to OMB in September.
- NSF is working with the Administration to prepare the President's FY 2021 Budget, which is due to Congress on February 3, 2020.

OIRM Update
for the B&O Advisory Committee Meeting (Fall 2019)

OIRM Senior Staff Changes

- Changes to OIRM Senior Staff since we last saw you in June.
    - In the Division of Human Resource Mangement (HRM), Bill Malyszka has been named Division Director. Nature McGinn is on detail to HRM and serving as Acting Deputy Division Director.
    - We are actively working on filling the openings for Deputy Division Directors in the Division of Administrative Services (DAS) and HRM.

Transfer of the Web Engineering and Operations Section and the User Experience Section from DAS to the Division of Information Services (DIS)

- The Web Engineering and Operations Section (WebOps) and the User Experience Section (UES) were transferred from DAS to DIS in early November. The roles and responsibilities of these sections include web development, web infrastructure management, user experience and user interface design, front end development, and usability testing, research and education. These employees manage NSF.gov and InsideNSF and the new beta.NSF.gov. Realigning WebOps and UES to DIS will enable OIRM to provide better customer service to the internal and external customers who use InsideNSF and NSF.gov pages , and allow OIRM to better manage and support mission critical systems and applications, IT funding requirements, and modernization efforts across the IT spectrum.

Panel Conference Center Improvements

- OIRM launched a new, interactive wayfinding system to assist both staff and guests to more efficiently navigate the NSF headquarters building. Touch-screen television monitors on both the second and third floors near the visitor elevator bay entrances display floor diagrams, dynamic turn-by-turn routing, and autogenerated directions. The monitors also display a list of meeting names and locations, current job openings and content provided by the Office of Legislative and Public Affairs, including NSF history and the research facilities globe, which allows users to explore where NSF-funded projects conduct key research. Staff and visitors can also access the wayfinding features from mobile devices on the NSF network by visiting navigate.nsf.gov. Staff are able to navigate the entire building while visitors can navigate floors 1-3.
- In response to employee suggestions, OIRM installed four filtered water bottle filling stations near the second and third floor east and west restrooms to provide a more environmentally-friendly and convenient alternative to single-use plastic products. Each station displays a counter that tallies how many plastic bottles have been saved by the number of reusable water bottles refills.

- OIRM installed an upgraded projector and screen in the conference room used for Town Halls, NSB meetings and other major events to improve display quality.

Customer Engagement

- OIRM established a Records Management Knowledge Group to keep agency's records custodians informed about changes in policies and procedures and to share best practices. The group meets on a quarterly basis.
- In collaboration with the science directorates, OIRM convened the Panel Reservation Working Group to identify strategies to improve the conference room reservation process for panels. Current reservation optimization efforts are working at an improved 85%-95% success rate. The focus of this group is to generate solutions to reach 100% success. The group has agreed to implement a new optimization process for the third quarter of FY20 based on 110% of the average number of reservations used in the previous 5 years.

FEVS 2019

- The 2019 Federal Employee Viewpoint Survey results are in and have been distributed to all Offices and Directorates. There is a discussion of the FEVS results next on the agenda.

Metro Shutdown

- The Yellow and Blue lines from National Airport outward were shut down from Memorial Day to Labor Day. This represented a major disruption to NSF staff commute times.
- OIRM took proactive steps to strike the right balance between making sure staff effectively supported the mission while having their individual circumstances taken into account.
    - OIRM held town hall meetings for all supervisors to reinforce their role in managing that balance between mission and impact of the shutdown.
    - OIRM arranged for shuttles between the NSF building and Pentagon City.
- OIRM actions made the shutdown a "non-event". There were virtually no issues raised by managers or staff regarding conflict around telework or other arrangeements and directorates reported being able to carry on the mission.

IT News

- NSF remains focused on preserving secure, reliable day-to-day operations for our IT systems and services, supporting the agency and its customers by providing systems and electronic tools that facilitate NSF's grants management processes and that enable agency business to be conducted effectively anytime and anywhere.
- In April, NSF replaced the Customer Relationship Management system (Siebel), used for the past 17 years and housed in the NSF datacenter, with ServiceNow, a FedRamp-compliant IT Service

Management solution housed in the Cloud. The new system, primarily used by IT Help Central and other DIS teams, is much more powerful and easier to use.

- NSF implemented several improvements in the area of audio-visual technologies and support for remote work. Based on customer feedback the AV Touch panels in all conference rooms were updated over the summer. The new home screen on the AV touch panels in NSF conference rooms provides quick access to the most common applications and to help. In addition, two surveys were implemented, one to gather feedback from panelists who participated in a panel with remote participants, and another to survey program officers post panel. Feedback from both surveys is monitored daily and issues are prioritized and addressed.
- NSF designed and implemented an Amazon private cloud with a direct connection, moving DIS to a modern, resilient architecture that integrates and automates development, infrastructure and security. NSF migrated SharePoint and beta.nsf.gov (which is the beta version of the new NSF website) to the cloud. The creation of the NSF private cloud sets the stage for NSF to begin migrating NSF's business systems to the cloud in Fiscal Year 20.
- To combat impersonation cybersecurity attacks, NSF first added "External" to the beginning of each subject line of emails originating outside of NSF so that staff would know if phishers were attempting to impersonate NSF staff. We then added a banner as a visual cue to the top of the body of all inbound emails that come from a source outside of NSF. In addition, training about phishing was improved by employing more sophisticated phishing tests and customizing the training webpage for each phishing campaign to identify the clues that the email was not legitimate.
- NSF continues modernizing IT services to improve the external research community's interactions with NSF while providing the agency workforce with new tools and capabilities that facilitate their work in support of the agency mission. Applications streamlined recently include Research.gov, MyNSF and NSF's Enterprise Reporting service.
- NSF continues to receive external recognition for its strong IT programs. In September 2019, NSF was honored at the third annual Federal Information Technology Acquisition Reform Act (FITARA) Awards and Forum as a repeat recipient for Best Overall (one of 4 agencies in this category). Additionally, NSF received the only agency award for Best in Scorecard under the FISMA category, which recognized our strong performance in the information security category of the scorecard. NSF was the only agency to receive an "A" grade in Cyber on the June 2019 FITARA scorecard.

Backgrounder: Fall 2019

NSF Advisory Committee for Business and Operations

Nature of Agenda Item: NSF results from the 2019 Federal Employee Viewpoint Survey (FEVS)

Presentation:

The Federal Employee Viewpoint Survey (FEVS) is an annual measure of NSF staff's perception of the workplace across several dimensions. Each year, all staff are invited to share their perspectives on their work unit, supervisor and leadership, and NSF culture. FEVS results are a major input into employee engagement action planning by each directorate and office. Senior leaders see the connection between engagement and productivity, willingness to change and innovate, and retention of our talent.

NSF staff are invested in the employee engagement process, as evidenced by the 71% response rate on the FEVS, compared to the government average of 43%. We have achieved four years of sustained improvement across all the engagement areas of focus – career development; performance and recognition; workload; and inclusion. In 2019, the score on the workload index (Items 9 & 10), went down one point.

OIRM continues to build out resources that support the directorates and offices as they work to improve engagement. Along with providing full transparency on all NSF FEVS results, we also have incorporated a module on effective employee engagement strategies in our Federal Supervisor training course, published a curated engagement website with resources touching many topics, facilitated a managers' brownbag discussion on employee morale and engagement, and are providing consulting support to the directorates and offices.

Committee Action/Feedback

1. What promising practices have you seen organizations like NSF use to sustain incremental improvements in engagement over time, or to stimulate more significant boosts to engagement?
2. NSF has a workforce with a diverse set of people and life experiences. How have you seen organizations successfully integrate STEM and non-STEM staff working side-by-side on the same mission?
3. NSF has made progress on improving methods to help NSF staff deal with their workload. However, NSF still sees a need to help staff better manage their growing workload given current resources, time, new technology, etc. In today's climate of "do more with less", how have you seen organizations or workforces successfully deal with increasing workplace demands when staff already see their workload as being difficult to complete?

Contact Person(s): Allison Radford, Acting Strategic Human Capital Planning Chief, 703-292-7423, aradford@nsf.gov.

2019 FEVS Results Briefing

BOAC

December 2019

Bottom Line Up Front

NSF continues to make positive gains across the FEVS

- Scores on all but one of the indices NSF tracks year-over-year increased again in 2019
- Response rates continue to be high at the agency level (71%)
  - (NSF's 2019 response rate is five points lower than 2018)

Workload index scores remain low (Index score 58) (2019 G-wide score = 54)

NSF performed very well on the items related to the partial shutdown

Supplemental FEVS (Survey open to all non-permanent, Federal staff)

- Scores on the supplemental FEVS are higher than scores from the main FEVS except for the following two questions
- Q18 My training needs are assessed. (Main FEVS: 64, Supplemental FEVS: 62)
- Q19 In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding). (Main FEVS:79, Supplemental FEVS: 71)

Bottom Line (continued)

How NSF Compares to other medium-sized agencies and government-wide:

- Among medium-sized agencies NSF now ranks third on all three of OPM's major indices: Employee Engagement, New IQ, and Global Satisfaction.
- Across the entire federal government NSF ranks sixth on both Employee Engagement and Global Satisfaction and NSF ranks seventh on the NEW IQ index.

- NSF's index score on Employee Engagement is nine points higher than the government-wide average.
- NSF scored eight points higher than the government-wide average on the NEW IQ index.
- NSF's score on OPM's Global Satisfaction index is 11 percentage points above the government-wide average.

2019 FEVS Results Overview

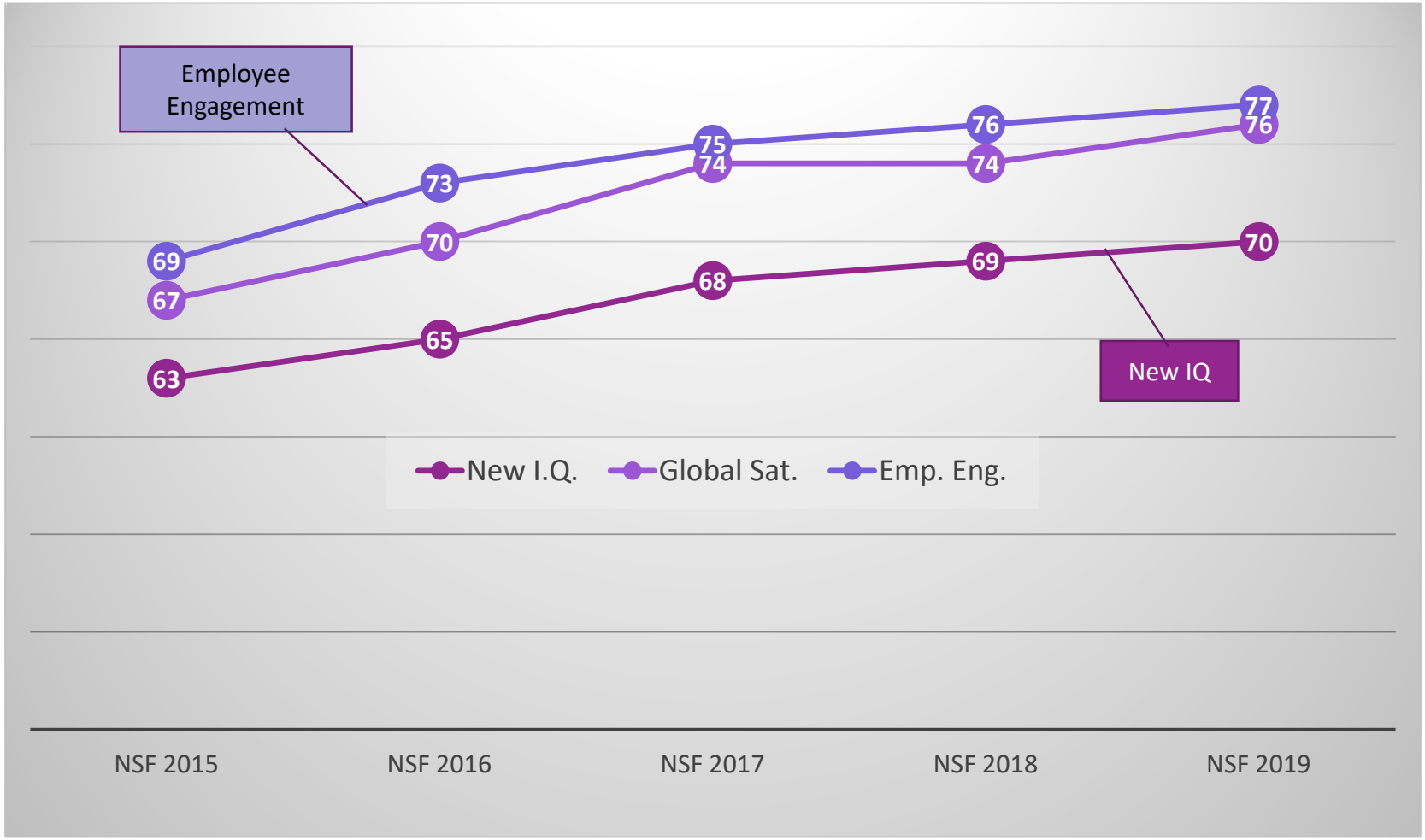
- OPM Indices:
  - **Employee Engagement** (15 items): Increased 1 pt. to 77
  - **New IQ** (20 items): Increased by 1 point to 70
  - **Global Satisfaction** (4 items): Increased by 2 points to 76
- NSF Indices:
  - **Career Development** (10 items): Increased a point to 67
  - **Workload** (2 items): Decreased by a point to 58
  - **Performance Management and Recognition** (14 items): Increased by 1 point to 66

The 2019 increases build on 5 years of steady increases

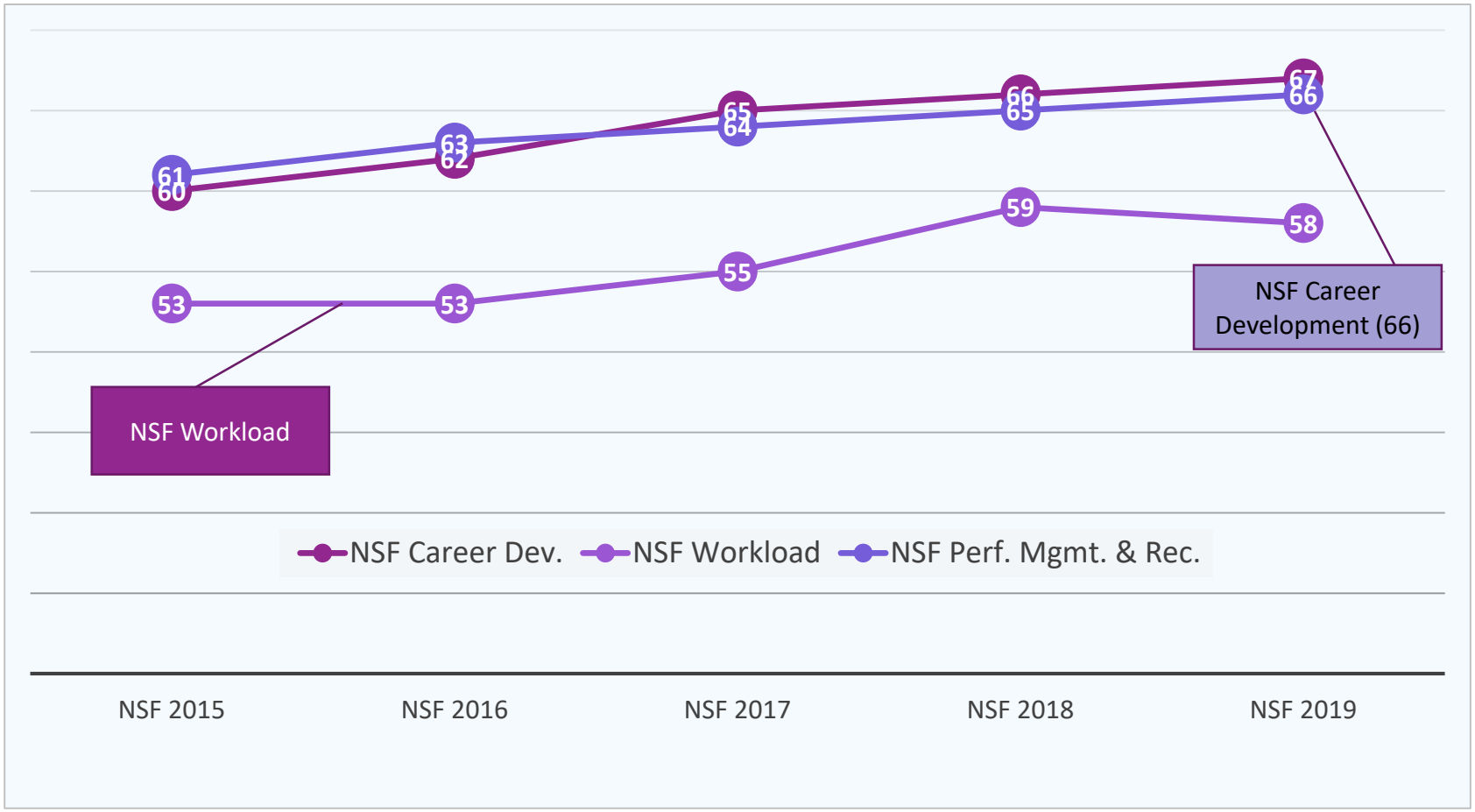
NSF 2019 FEVS Final, Adjusted Response Rates

FEVS (2019) Index Scores for NSF Compared to Medium-sized Agencies and Government-wide

OPM Index Scores by Year



NSF Index Scores by Year



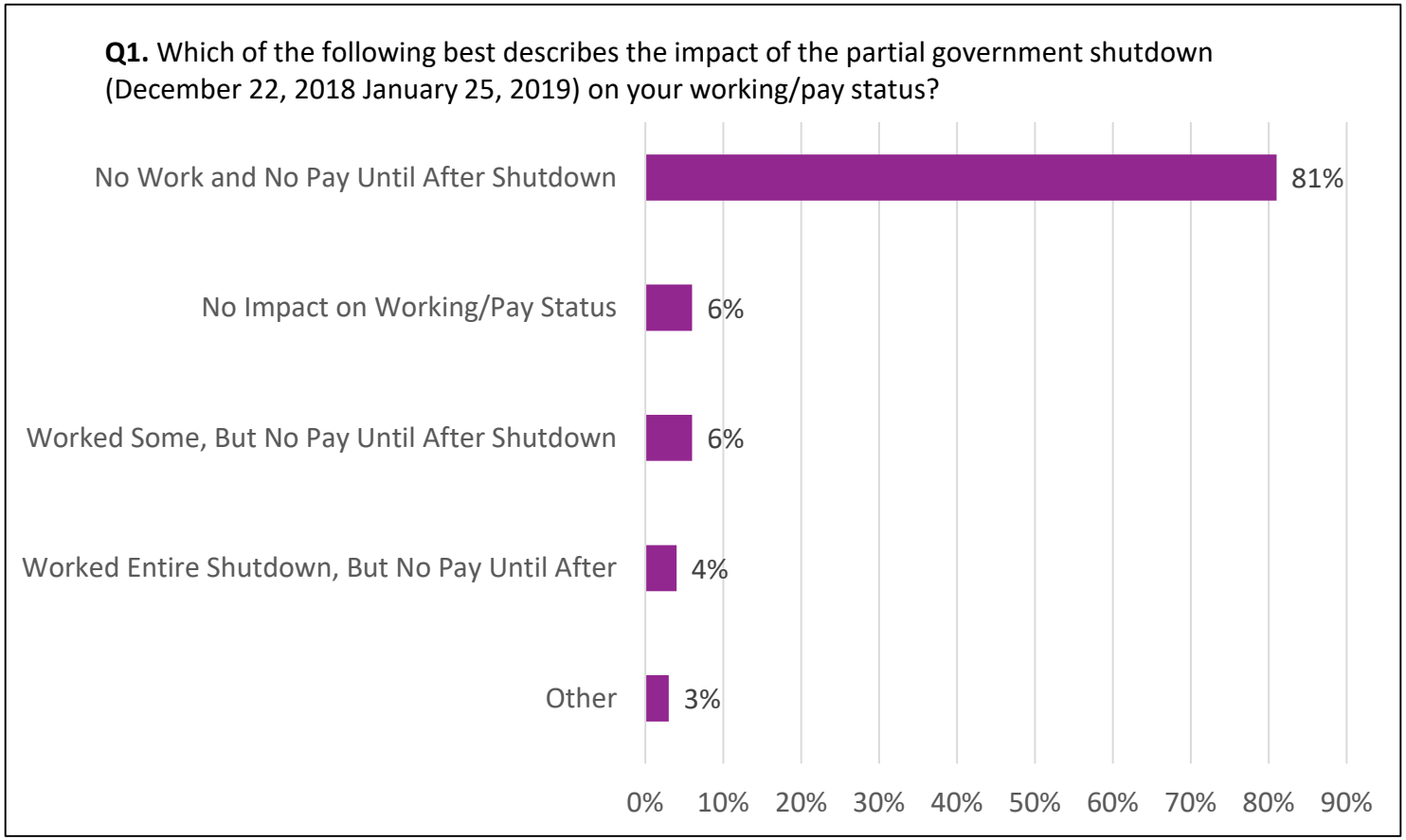
2019 FEVS Item-Level Results Overview

Greatest Increases 2015-2019	(54) My organization's leaders maintain high standards of honesty and integrity (53) In my organization, leaders generate high levels of motivation and commitment in the workforce.	+15 (from 57 to 72) +15 (from 46 to 61)
Greatest Decrease 2015-2019	*(14) Physical conditions (for example, noise level, temperature, lighting, cleanliness in the workplace) allow employees to perform their jobs well.*	-3 (from 82 to 79)
Greatest Increases 2018-2019	(53) In my organization, senior leaders generate high levels of motivation and commitment in the workforce (62) Senior leaders demonstrate support for Work-Life programs	+6 (from 55 to 61) +6 (from 72 to 78)
Greatest Decrease 2018-2019	(41) I believe the results of the survey will be used to make my agency a better place to work	-3 (from 57 to 54)

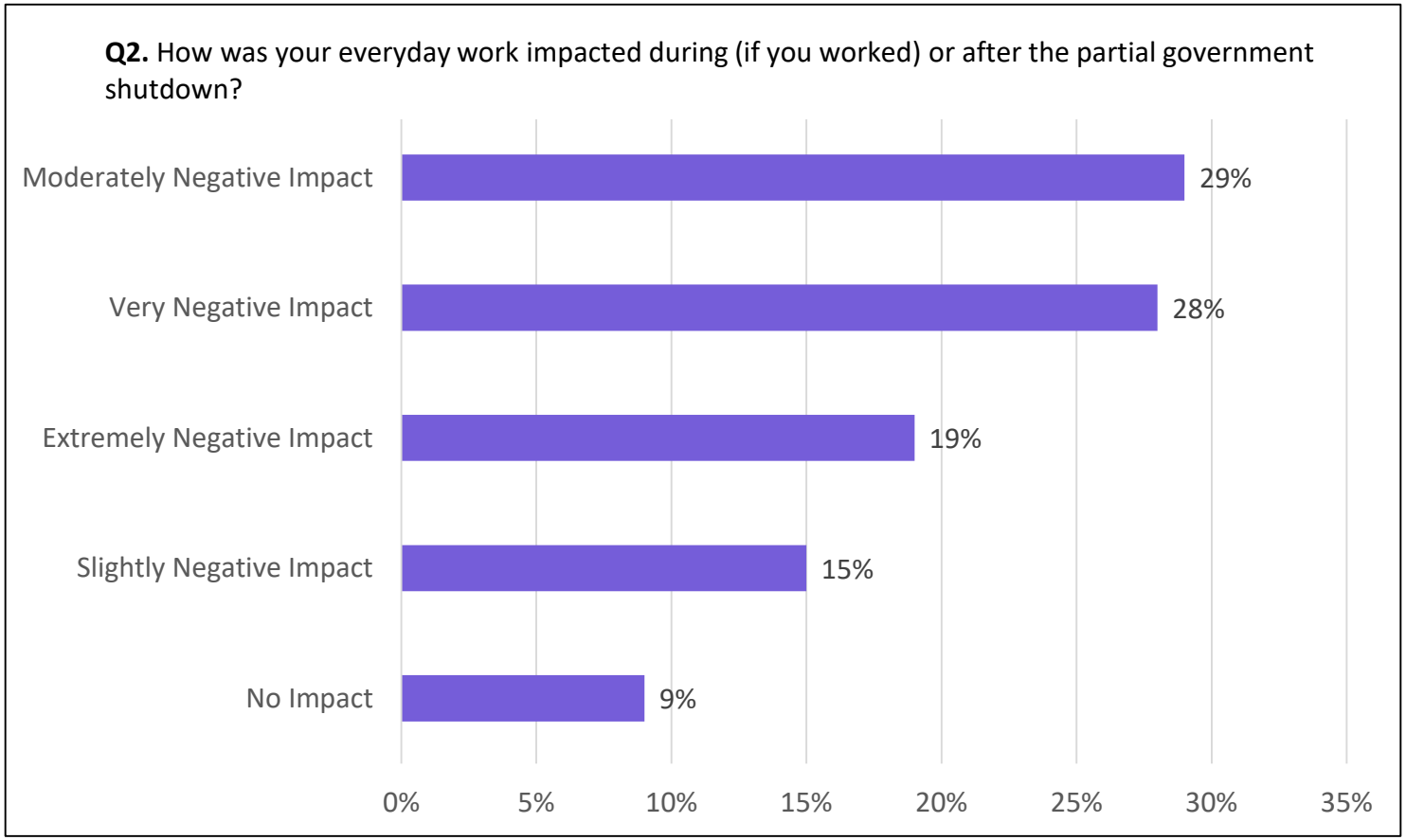
2019 Items Related to the Partial Shutdown

Item Text
Which of the following best describes the impact of the partial government shutdown (December 22, 2018 January 25, 2019) on your working/pay status?
How was your everyday work impacted during (if you worked) or after the partial government shutdown?
In what ways did the partial government shutdown negatively affect your work? (Check all that apply)
Are you looking for another job because of the partial government shutdown?
My agency provided the support (e.g., communication, assistance, guidance) I needed during the partial government shutdown.

2019 Items Related to the Partial Shutdown



2019 Items Related to the Partial Shutdown



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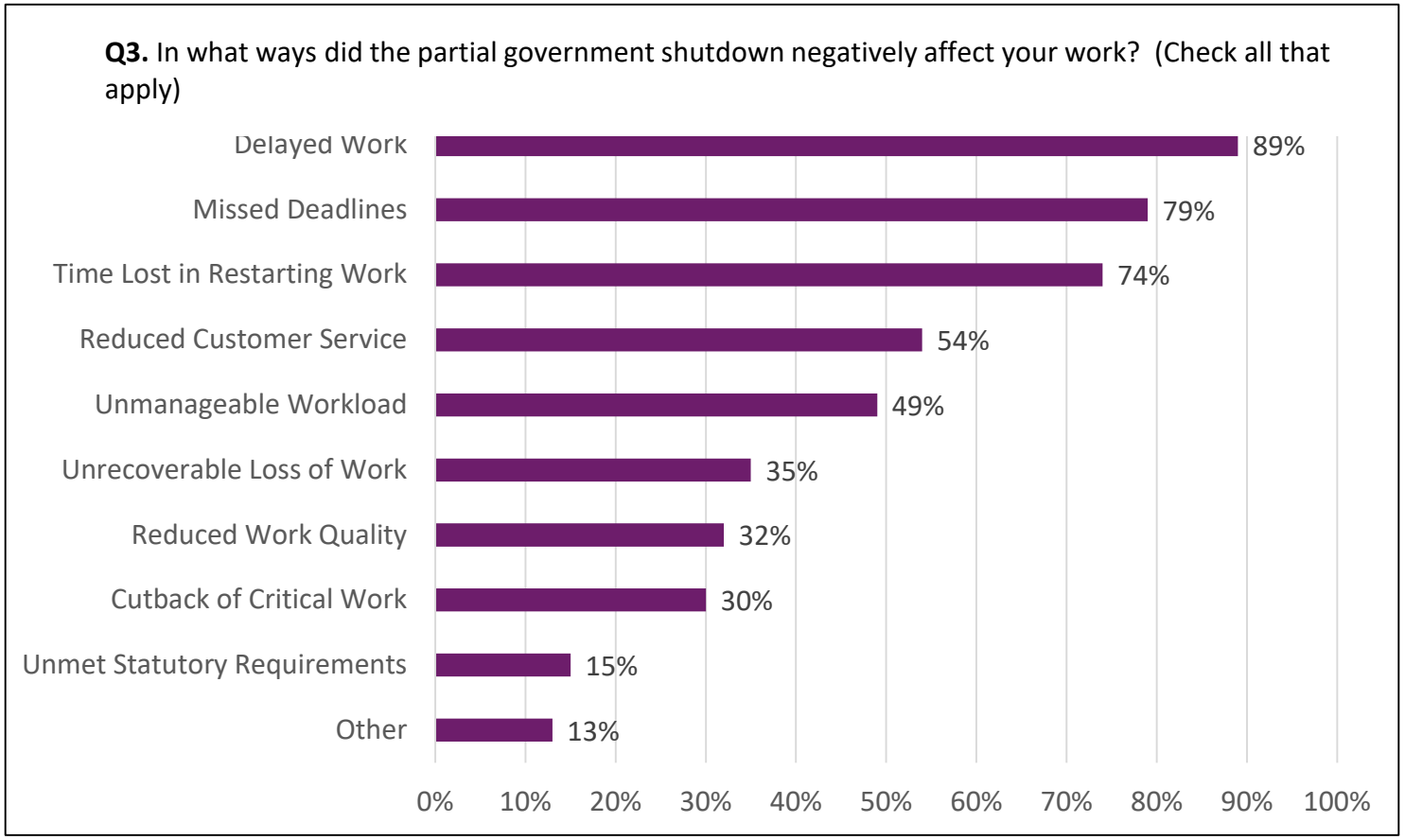

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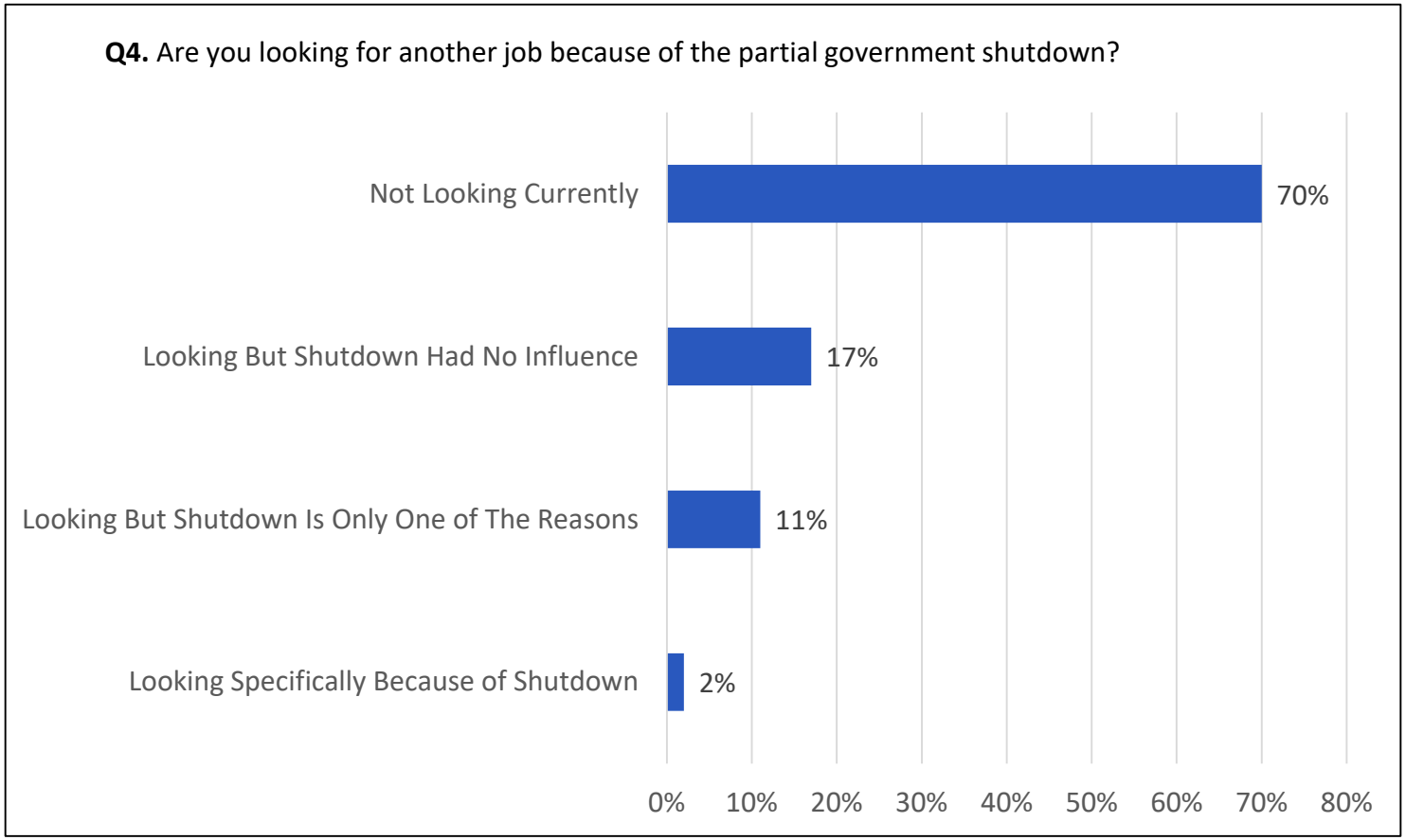
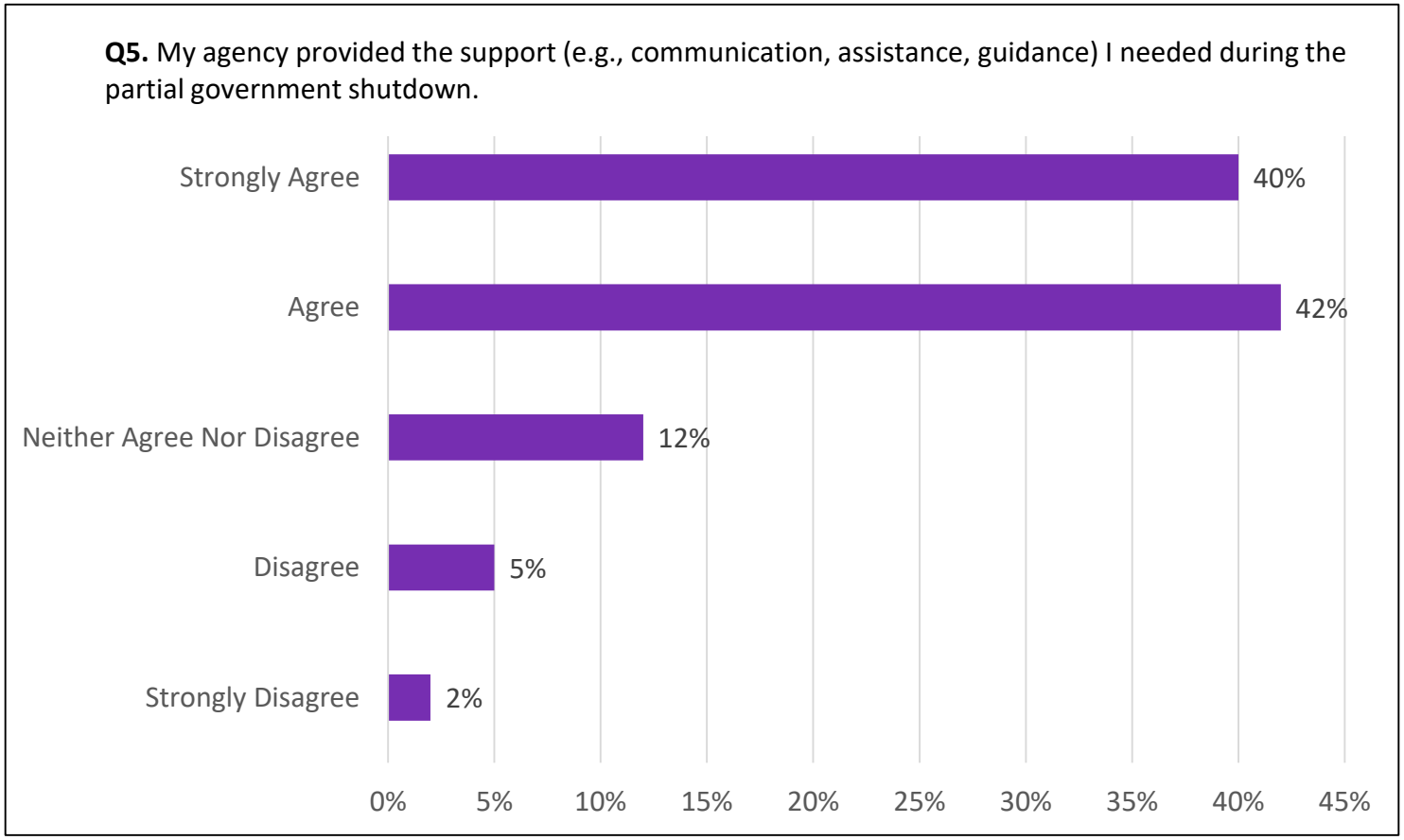


2019 Items Related to the Partial Shutdown



Engagement Action Planning

Start FY20 Employee Engagement Cycle

Customized Support (options range from hands-on advising to self-directed guidance/tools)

November

Release 2019 FEVS results to all NSF staff and brief senior leaders

Nov-Dec

- Schedule action planning advising meetings
- Assess results achieved under current Action Plan
- Define support needs to assist action planning

January

- Assess progress, diagnose challenges, and update FY 20 Action Plans
- Conduct advising meetings

Updated Action plans due 1/31/19

Feb-April

- Provide internal consulting services upon request (e.g., focus groups, interviews, facilitated discussions)
- Share promising practices

May

2020 FEVS administered

Helping Build Engagement

TOGETHER WE THRIVE

[Engagement SharePoint Site]
- Tools
- Resources
- Action plans

FEVS
FEDERAL EMPLOYEE VIEWPOINT SURVEY
employees influencing change

[FEVS Center]
- Annual results

LearnNSF

[Maximizing Employee Engagement]
[Motivating and Engaging Employees]

Backgrounder: Fall 2019

NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Balancing Mission Performance and Compliance

Presentation:

In July 2019, the Bipartisan Policy Center's Task Force on Executive Branch Oversight published a report entitled "Oversight Matters: Balancing Mission, Risk and Compliance." One of the Task Force's members, Robert Shea, will provide an overview of the report's observations and recommendations. The Task Force examined the current state of oversight, noted effective practices, and made recommendations to help improve Federal agency focus. The Task Force suggests that agencies eliminate compliance for compliance sake and focus on risk-based, data-driven compliance policies.

NSF strives to balance its efforts dedicated to mission performance with time spent fulfilling compliance requirements related to audit and Federal regulations. This session will help inform NSF and its stakeholders on ways in which NSF could improve its capacity to focus on mission.

The report provides 11 recommendations for agency leaders, external oversight bodies (for example, inspector generals, or the Governmental Accounting Office), the Office of Management and Budget, and Congress. Key recommendations for agency leaders and external oversight bodies include;

- Agency leaders should reduce the time they spend on compliance-related activities and dedicate more time to mission performance.
- Agency leaders should consider collecting proxy or qualitative data on the cost/benefits of time spent on compliance versus performance activities.
- Agency leaders should collect more robust measures of mission performance and analyze with risk measures to better identify root causes of risk.
- Agency Leaders should consult with and seek guidance from external oversight bodies.
- Agency leaders should define and adopt cultures that report and address risk.
- External oversight bodies should refocus oversight practices to include more mission-related values and outcomes in addition to the traditional emphasis on fraud, waste, and abuse.

Committee Action/Feedback

1. Assess the applicability of the report's recommendations in the NSF environment.

2. Gauge NSF's status against these recommendations as to where NSF is performing well and where NSF has opportunities to improve.

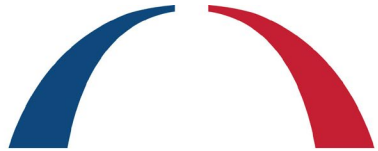
3. Identify areas that NSF should explore.

Contact Person: Alex Wynnyk, (703)292-4472, awynnyk@nsf.gov

Oversight Matters: Balancing Mission, Risk, and Compliance

BPC Task Force on Executive Branch Oversight, a Member's Perspective

Robert Shea
Grant Thornton



BIPARTISAN POLICY CENTER

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Task Force Members

- **Clarence Crawford**, former Chief Financial Officer, Office of Personnel Management
- **Janice Lachance**, Former President, American Society for Public Administration; former Director, OPM
- **Marcus Peacock,** Chief Operating Officer, Business Roundtable; former Deputy Administrator, EPA
- **Linda Springer**, Former Director, OPM; former Controller, OMB
- **Denise Wilson,** Former Special Assistant to the President, Office of Legislative Affairs; former Professional Staff Member, House Office and Government Reform Committee
- **Brenna McAfee,** Project Associate, Democracy Project
- **Dan G. Blair**, BPC Senior Counselor and Fellow, Former Deputy Director, OPM
- **G. Edward DeSeve**, Former Special Assistant to the Vice President; former Deputy Director for Management, OMB
- **David Mader**, Civilian Sector Chief Strategy Officer, Deloitte; former Controller and Acting Deputy Director for Management, OMB
- **Sean O'Keefe**, Professor, Syracuse University Maxwell School of Citizenship and Public Affairs; former Deputy Director, OMB
- **Robert J. Shea,** Principal, Grant Thornton; former Associate Director, OMB
- **John C. Fortier**, Ph.D. Director, Governmental Studies
- **Michael Thorning,** Associate Director, Congress Project
- **Beverly Hudnut**, BPC Fellow
- **Don Wolfensberger**, BPC Fellow
- **Rebecca Zussman**, Ph. D. Detailee, GSA

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Oversight Community Capacity:

Oversight Across Government Should Increase Focus on Mission Performance

- External executive branch oversight bodies (for example, IGs or GAO) should refocus their oversight practices to include more mission-related values and outcomes in addition to the traditional emphasis on fraud, waste, and abuse.
- Internal executive branch oversight bodies (for example, department and independent agency leaders) should reduce the time they spend on compliance-related activities so they can dedicate more time to mission performance.
- Internal executive branch oversight bodies (for example, department and independent agency leaders) should consider collecting proxy or qualitative data related to time spent on compliance versus performance activities in order to conduct cost/ benefit analyses.
- OMB should consider building on the existing enterprise risk-management (ERM) framework by incorporating mission performance as the end goal.

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Trust in the Oversight Culture:

Leaders Can Take Steps to Bolster Trust in Oversight

- Department and independent agency leaders should consider addressing incidents of improper behavior by identifying the root cause of the incident before establishing new policies.

- Department and independent agency leaders should set a tone of trust from the top by regularly recognizing and incentivizing exemplary performances characterized by a risk-balanced perspective in achieving operational, compliance, and reporting objectives.

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Risk-Based, Data-Driven Compliance Policies:

Oversight Needs to Be Smarter and More Strategic

- CRS should consider updating the 2004 management compendium so that agencies have an up-to-date list of management laws and policies they must comply with.

- In their oversight agendas, Congress should consider using a risk-based approach that better emphasizes performance outcomes.

- Department and independent agency leaders should collect more robust measures of mission performance and analyze with risk measures to better identify root causes of risks.

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Collaboration Among Oversight Bodies:

Oversight bodies need to redefine how they work together.

- Internal oversight bodies should regularly consult with and seek guidance from external oversight bodies.
- Internal oversight bodies should define and adopt cultures that more transparently report and address risks.

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Feedback for the Committee:

- Assess the applicability of the report's recommendations in the NSF environment.
- Gauge NSF's status against these recommendations as to where NSF is performing well and where NSF has opportunities to improve.
- Identify areas that NSF should explore.

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Backgrounder: Fall 2019

NSF Advisory Committee for Business and Operations

Nature of Agenda Item: NSF's Leadership Development Program

Presentation:

The National Science Foundation launched the first Leadership Development Program (LDP) in more than 25 years at the agency in January 2018 and will graduate its first cohort of Aspiring Supervisors (17) and Aspiring Executives (12) on December 12, 2019. This competitive, merit-based program is designed to enhance the leadership capabilities within the Foundation through robust training opportunities, mentoring, coaching, networking, and detail assignments. This program reinforces the Foundation's commitment to developing internal leadership capability by investing in our employees and their professional development.

The NSF LDP is a strategic program designed to:

- enhance NSF's capacity to effectively lead teams and organizations;
- develop the leadership capabilities of high-potential employees for their current and potential future roles;
- strengthen NSF's internal supply of highly-qualified, diverse candidates positioned to be competitive for supervisory and executive positions; and
- expose current and future leaders to development practices and networks.

Approach:

The program develops cohorts of rising leaders who understand the context within which NSF operates, who develop strong connections within the Foundation and across the federal government, and who make impactful contributions to NSF's success as a high-performing federal agency. As a highly trained, vetted and engaged group, LDP participants are eager to take on formal and informal leadership roles at NSF.

LDP Successes and Outcomes:

- LDP participants have expanded their personal and professional networks within and outside NSF and have reported many positive results of these new connections.
- Even before completing the program, LDP participants have made measurable positive impacts on NSF, for example, through the required details:
    - **Seven participants** have engaged in details that cross the research directorate/operational directorate lines (e.g., OIRM-EHR, CISE-BFA), learning to work across disciplines and providing a mechanism for cross-pollination of ideas and approaches.
- Every supervisor of an LDP detailee in the first year of the program was highly positive about their contributions agreeing that their employee is gaining the skills needed to move into more advanced leadership positions.
- Participants in the program have made meaningful connections, building a strong and diverse network of trusted advisors.

While it is too early in the program to measure organizational impact, NSF will continue to monitor progress with expected impacts to include:

- Pipeline of candidates for promotion aligned with needs results in increased rate of internal hires;
- Participants begin to see themselves as change agents, with increased willingness to take risks and innovate;
- Improved morale and engagement within participant cohorts—and among those who work with them;
- Strong learning and leadership culture; and
- Strong program reputation and visibility across the federal government.

Committee Action/Feedback

NSF is interested in determining how to continue to support and leverage the talents of the LDP graduates and improve the program to help further its objectives. Specifically:

1. How do you identify high potential employees in the federal government?
2. What is your recommended approach for developing executive and supervisory leadership competencies for high potential leaders of a federal agency?
3. How do we ensure that we best leverage the talents of program graduates?

Contact Person(s):

- Tracy Bojko, 703-292-4395, tbojko@nsf.gov
- Macey Cox, 703-292-7485, mcox@nsf.gov

NSF Leadership Development Program

NSF LEADERSHIP
DEVELOPMENT PROGRAM

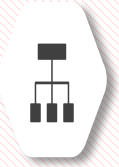
NSF Leadership Development Program

Producing Next-Gen Executives and Supervisors

NSF's flagship management preparation program identifies, trains, and empowers a diverse cohort of emerging, character-driven leaders for federal supervisory and executive service.

IDENTIFY AND RETAIN TOP TALENT

Strengthen NSF's internal supply of highly qualified, diverse candidates positioned to be supervisors and executives.



LEARN THROUGH EXPERIENCE

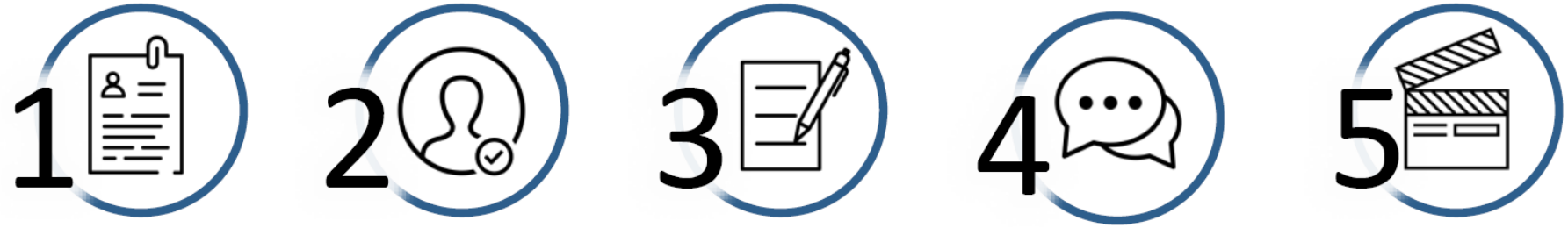
Develop high-potential employee leadership capabilities for their current and potential future roles via "learning by doing."

GROW FUTURE LEADERSHIP

Enhance the Foundation's capacity to effectively lead teams and organizations. First cohort ready now to take on leadership roles in the agency.

NSF LEADERSHIP
DEVELOPMENT PROGRAM

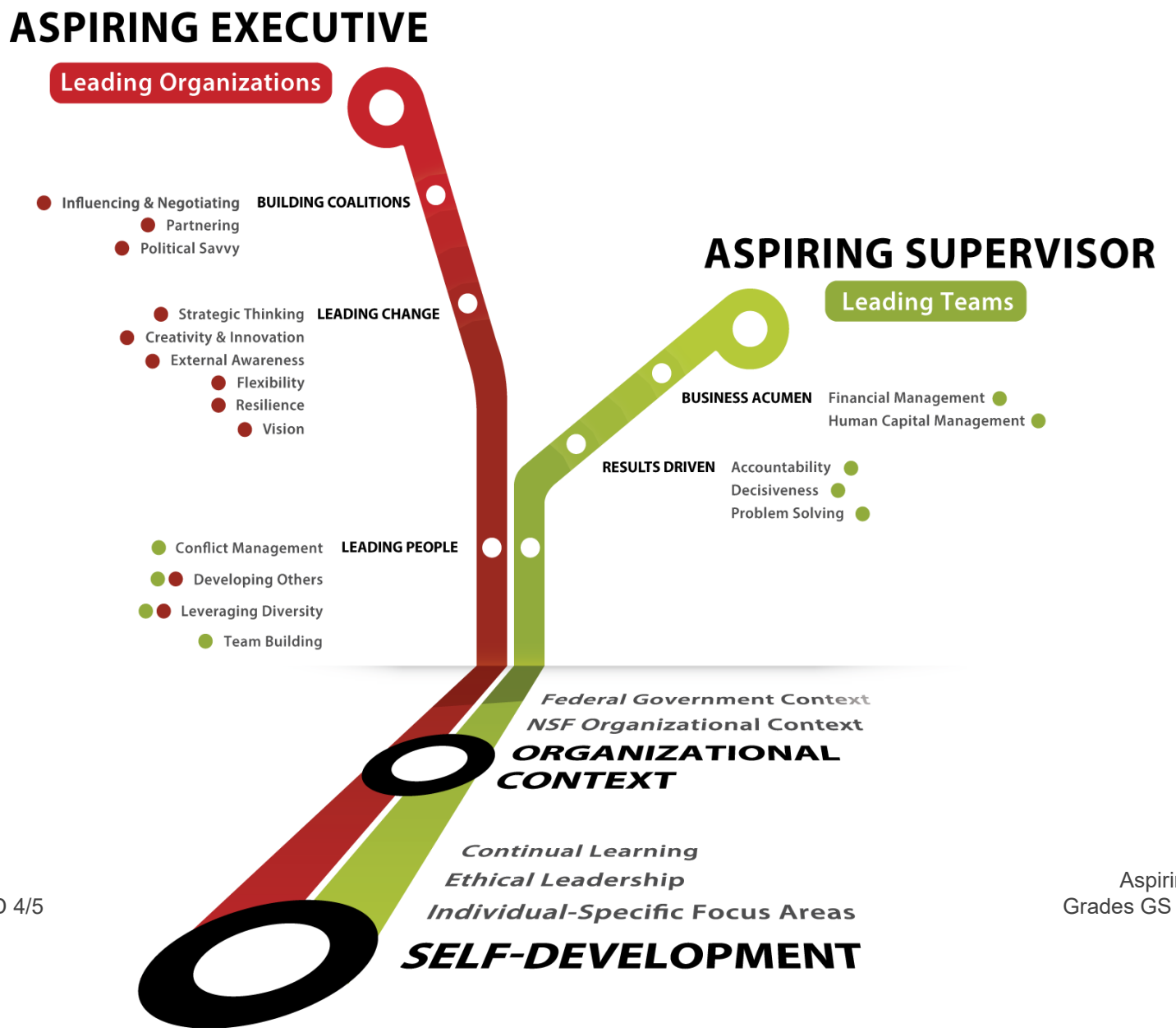
5 STEP SELECTION PROCESS



	Apply	Receive Approval	Write	Interview	Role Play
Details	Submit an application to ldp@nsf.gov	Discuss your intent to participate and ask your supervisor to complete the approval form	Participate in a timed, proctored writing assessment	Participate in a structured, panel interview lasting up to one hour	Take the 3-day "Leadership and Problem Solving Skills" course and complete a role-play exercise for a panel of raters

Great Leaders Start Here

NSF's Leadership Development Program (LDP) identifies and develops aspiring executives and supervisors to lead organizations and teams, respectively, building on NSF's rich tradition of integrating research and education. The two-year program includes coursework, details, individual development activities, coaching and mentoring.



Aspiring Executives
grades GS 14/15 and AD 4/5

Aspiring Supervisors
Grades GS 12/13/14 and AD 2/3

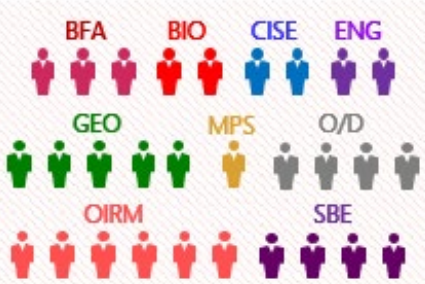
NSF LEADERSHIP
DEVELOPMENT PROGRAM

LDP Details

NSF LEADERSHIP DEVELOPMENT PROGRAM

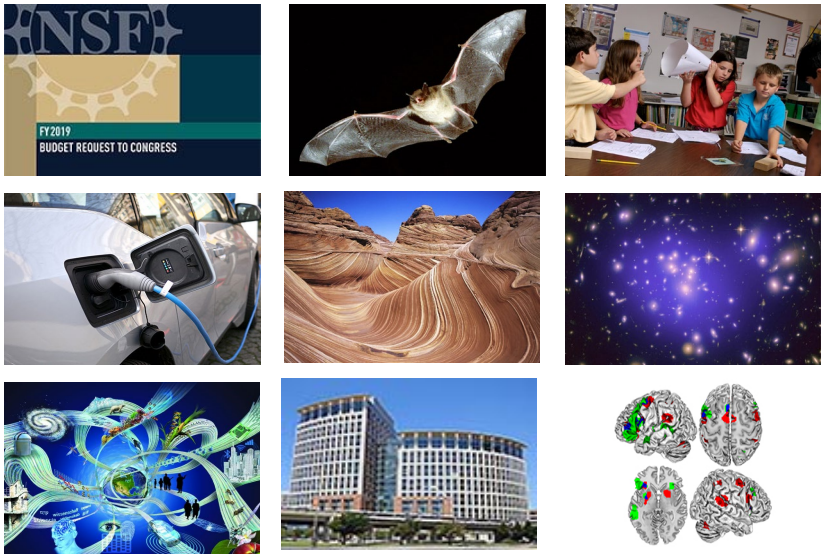
LDP details allow participants to expand personal and professional networks within and outside NSF, serve as NSF ambassadors to other agencies, and provide cross-pollination between scientific and business operations within NSF.

29 Participants



17 LDP detailees hosted by 9 NSF organizations to date

BFA ∘ BIO ∘ EHR ∘ ENG ∘ GEO ∘ MPS ∘ O/D ∘ OIRM ∘ SBE



11 LDP detailees hosted by 9 external organizations to date

DOI ∘ DOJ ∘ NASA ∘ NOAA ∘ OSTP ∘ USDA ∘ USGS ∘ U.S. Air Force ∘ University of Virginia

NSF Organizations Supporting or Hosting Participants **100%**

LDP Benchmarks:
Context, Connection, Contribution, Convergence

NSF LEADERSHIP DEVELOPMENT PROGRAM

"As evident from my direct interaction with participants, the LDP program is a true benefit to NSF. Opportunities for hands-on experience and practical training broaden perspectives and knowledge of the agency. This cohort is ready to lead."

Joanne Tornow
Assistant Director, BIO

93%
of NSF's senior executives support the program

"LDP's strategic approach to development within diversity and inclusion has really fostered engagement on the topic…It is helping them to make impactful actions and decisions from the start of their leadership position(s)."

Rhonda Davis
Office Head, ODI

95%
of participants have applied program lessons to their jobs

"The lessons I learned about leading change and people, handling difficult situations and resolving challenges, are applied every day in my job."

ALL detail supervisors agree participants are ready for more advanced leadership roles
100%

8
counterpart federal agencies host LDP detailees

Formal LDP Events
17

"Their professional evolution led to innovative engagement in current units and facilitated integration into diverse positions across the Foundation. The LDP program epitomizes what supervisors knew—capitalizing on leadership potential is a win-win for both individuals and organizations."

Lina Patino, Division Director, GEO

Questions for the LDP Panel:

- What has been your experience in the NSF LDP? Please include your major career milestones leading up to your LDP experience, and whether/how your LDP experience may have changed you.
- From your perspective, what makes the NSF LDP successful/unique?
- What challenges within the LDP program, if any, have you experienced?

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Questions for the Committee:

1. How do you identify high potential employees in the federal government?

2. What is your recommended approach for developing executive and supervisory leadership competencies for high potential leaders of a federal agency?

3. How do we ensure that we best leverage the talents of program graduates?

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Backgrounder: Fall 2019

NSF Advisory Committee for Business and Operations

CXO Offices of Tomorrow: B is for Blockchain

Nature of Agenda Item: Exploration of Grants Community Blockchain Use Cases; Simplifying Identification of Overlapping & Duplicative Research and Reducing Burdens of Letter of Credit Processes and Systems

Presentation:

Respondents will provide a brief update on the prior year session on the CFO of the Future. Since last year NSF has made progress in robotic processing automation, advancing data analytics, strategic workforce planning, and interdisciplinary management approaches. This year's session will focus and solicit guidance on our developing efforts to explore game changing distributed ledger technologies more commonly known as Blockchain.

Simplifying Identification of Overlapping & Duplicative Research: NSF is planning to leverage advanced technologies to solve a persistent challenge in the grant-making community: duplicative and overlapping research grants across science research grant-making organizations including federal agencies such as HHS, USDA, NASA, DoD. To minimize duplication and overlap of the research grants, we will apply emerging technologies such as advanced analytics working on top of a Blockchain infrastructure to build a "Grants Community Blockchain" (GCB). The GCB network will provide instantaneous notification to participating organizations about proposal information determined to be the most valuable for sharing across participating organizations by comparing "proposal fingerprints".

This we successfully built the fingerprint: the key "block" in the "chain" and proved that comparing fingerprints reveals overlapping proposals. In doing so we "liberated" this proposal data while at the same time protecting proposal contents including intellectual property of merit and sensitive information.

Even without the full GCB built, we now have tools that will be used to simplify detection of possible duplicate requests. With the GCB in place, all participating agencies will reap the benefit of this advancement.

Reducing Burdens of Letter of Credit Processes and Systems: NSF recently launched a Federal Demonstration Project with the research community to quantify the workload burden of using multiple letter of credit drawdown systems. In addition, Treasury and NSF is working on a research and development project (i.e., proof of concept) to understand if a blockchain based payment request application offers any benefits for 1) increasing payment efficiency and transparency for sub-recipient payments; and/or 2) reducing prime and sub-recipient reporting for Federal payments that 'pass through' multiple parties. This proof of concept is strictly a "sandbox" test and will not be integrated with any Federal system(s) nor will there be any transfer of Federal data; all data used will be fictitious and will operate within a Contractor-hosted environment.

Committee Action/Feedback

NSF is looking for the following feedback:

1. How do we educate the community and demystify distributed ledger technologies (e.g., do we need a myth busting campaign)?

2. How to scale the use cases, design a governance process and operationalize the tool as an innovative government-wide shared service solution.

3. How do we motivate and get the Research Community excited about this?

Contact Person(s)

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Mike Wetklow, Phone: 703-292-4436, email: mwetklow@nsf.gov

CXO Offices of Tomorrow: B is for Blockchain

Dorothy Aaronson, Chief Information Officer
Mike Wetklow, Deputy Chief Financial Officer/Division Director Financial Management
National Science Foundation

Adam Goldberg, Executive Architect
Craig Fisher, Innovation Program Manager
Department of Treasury, Bureau of Fiscal Service, Office of Financial Innovation and Transformation
December 10, 2019

Introduction

Purpose:

- To provide a brief update on the prior year session on the CFO Office of the Future.
- To discuss NSF and Treasury Blockchain exploration efforts.
  - Simplifying Identification of Overlapping & Duplicative Research
  - Reducing Burdens of Letter of Credit Processes and Systems

Outcome:

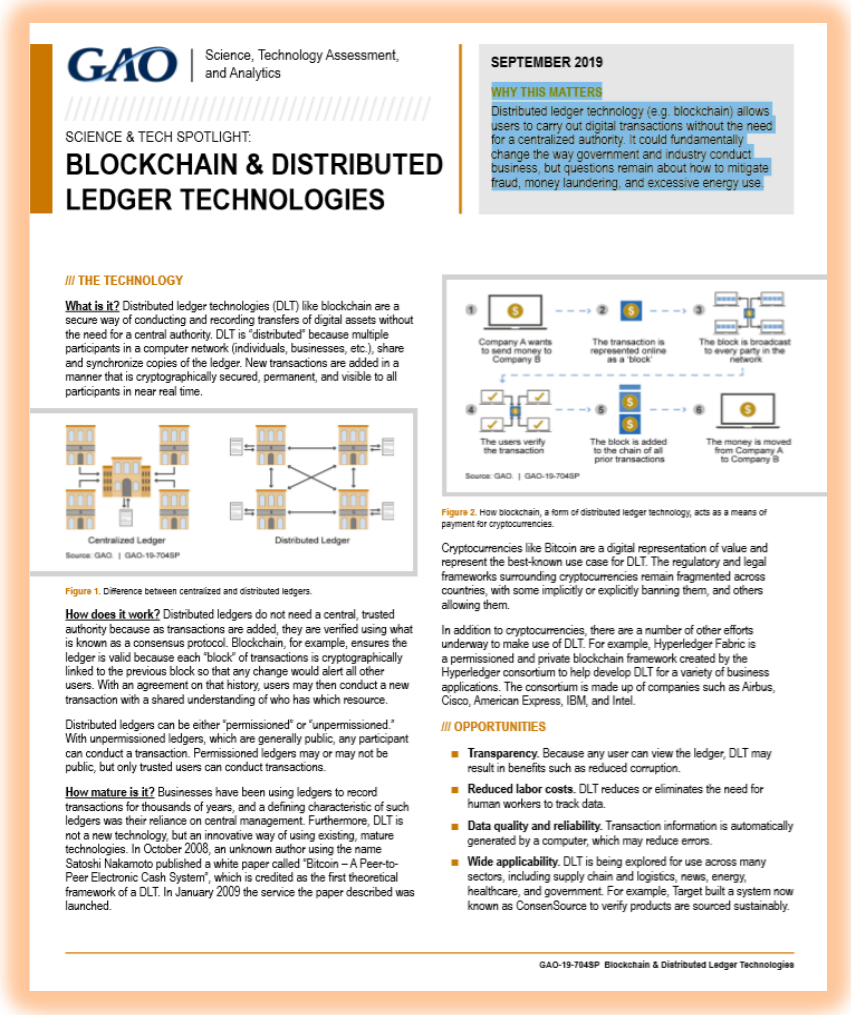
- BOAC guidance and feedback on further explorations of Blockchain technologies

CFO OFFICE OF THE FUTURE Update

Since last year NSF has made progress in robotic processing automation, advancing data analytics, strategic workforce planning, and interdisciplinary management approaches.

This year's session will focus and solicit guidance on our developing efforts to explore game changing distributed ledger technologies more commonly known as Blockchain.

Blockchain and Distributed Ledger Technologies



GAO | Science, Technology Assessment, and Analytics

SCIENCE & TECH SPOTLIGHT:

BLOCKCHAIN & DISTRIBUTED LEDGER TECHNOLOGIES

SEPTEMBER 2019

WHY THIS MATTERS

Distributed ledger technology (e.g. blockchain) allows users to carry out digital transactions without the need for a centralized authority. It could fundamentally change the way government and industry conduct business, but questions remain about how to mitigate fraud, money laundering, and excessive energy use.

/// THE TECHNOLOGY

What is it? Distributed ledger technologies (DLT) like blockchain are a secure way of conducting and recording transfers of digital assets without the need for a central authority. DLT is "distributed" because multiple participants in a computer network (individuals, businesses, etc.), share and synchronize copies of the ledger. New transactions are added in a manner that is cryptographically secured, permanent, and visible to all participants in near real time.

Figure 1. Difference between centralized and distributed ledgers.

How does it work? Distributed ledgers do not need a central, trusted authority because as transactions are added, they are verified using what is known as a consensus protocol. Blockchain, for example, ensures the ledger is valid because each "block" of transactions is cryptographically linked to the previous block so that any change would alert all other users. With an agreement on that history, users may then conduct a new transaction with a shared understanding of who has which resource.

Distributed ledgers can be either "permissioned" or "unpermissioned." With unpermissioned ledgers, which are generally public, any participant can conduct a transaction. Permissioned ledgers may or may not be public, but only trusted users can conduct transactions.

How mature is it? Businesses have been using ledgers to record transactions for thousands of years, and a defining characteristic of such ledgers was their reliance on central management. Furthermore, DLT is not a new technology, but an innovative way of using existing, mature technologies. In October 2008, an unknown author using the name Satoshi Nakamoto published a white paper called "Bitcoin – A Peer-to-Peer Electronic Cash System", which is credited as the first theoretical framework of a DLT. In January 2009 the service the paper described was launched.

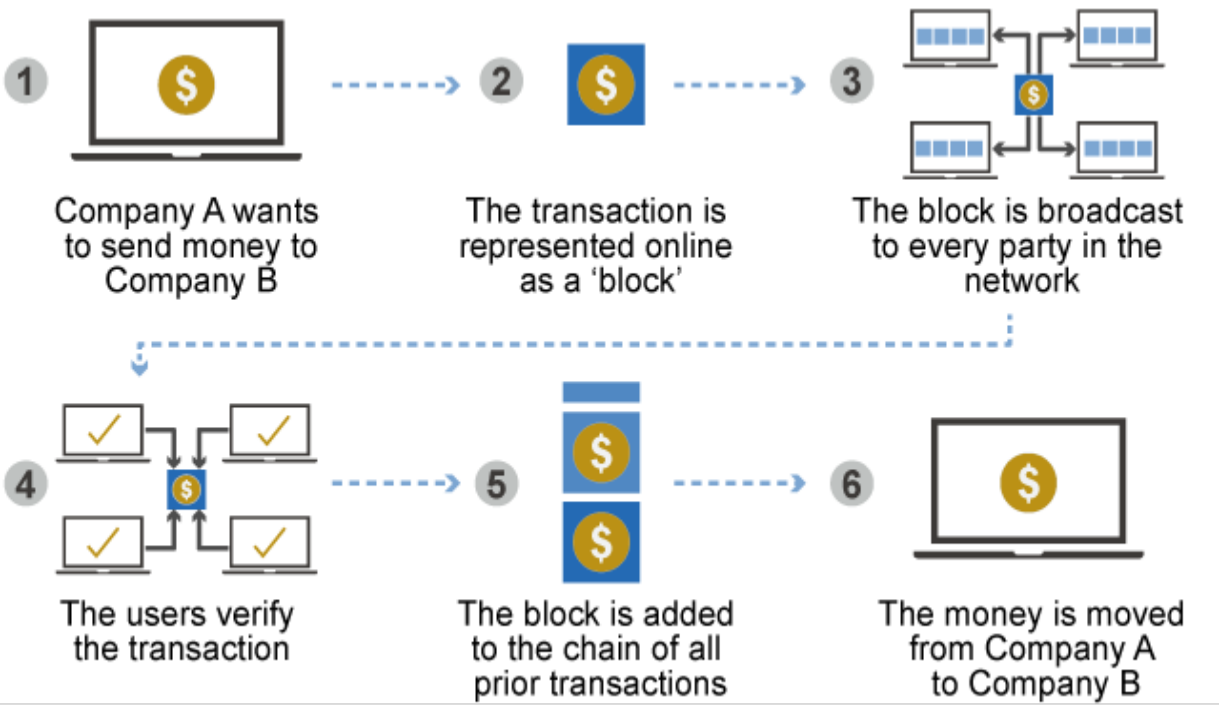
Figure 2. How blockchain, a form of distributed ledger technology, acts as a means of payment for cryptocurrencies.

Cryptocurrencies like Bitcoin are a digital representation of value and represent the best-known use case for DLT. The regulatory and legal frameworks surrounding cryptocurrencies remain fragmented across countries, with some implicitly or explicitly banning them, and others allowing them.

In addition to cryptocurrencies, there are a number of other efforts underway to make use of DLT. For example, Hyperledger Fabric is a permissioned and private blockchain framework created by the Hyperledger consortium to help develop DLT for a variety of business applications. The consortium is made up of companies such as Airbus, Cisco, American Express, IBM, and Intel.

/// OPPORTUNITIES

- **Transparency.** Because any user can view the ledger, DLT may result in benefits such as reduced corruption.
- **Reduced labor costs.** DLT reduces or eliminates the need for human workers to track data.
- **Data quality and reliability.** Transaction information is automatically generated by a computer, which may reduce errors.
- **Wide applicability.** DLT is being explored for use across many sectors, including supply chain and logistics, news, energy, healthcare, and government. For example, Target built a system now known as ConsenSource to verify products are sourced sustainably.

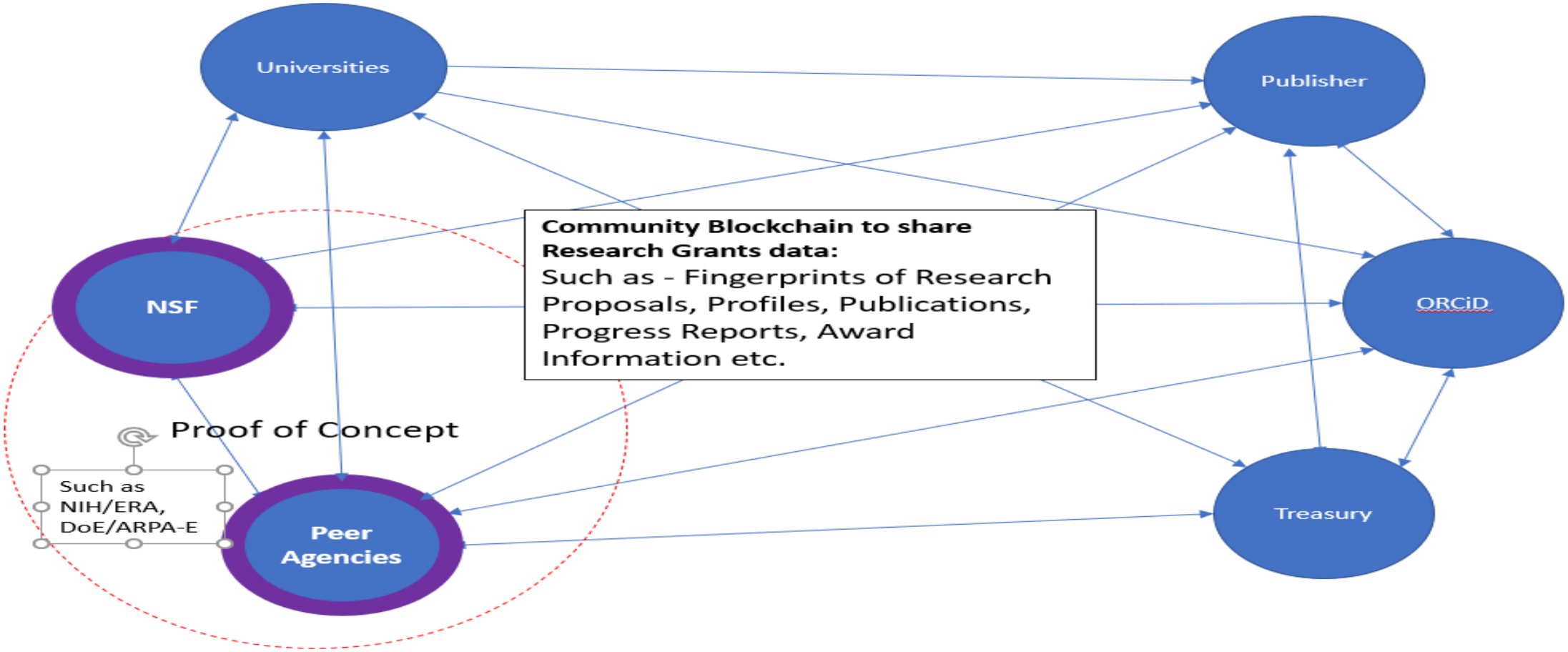


Source: GAO. | GAO-19-704SP

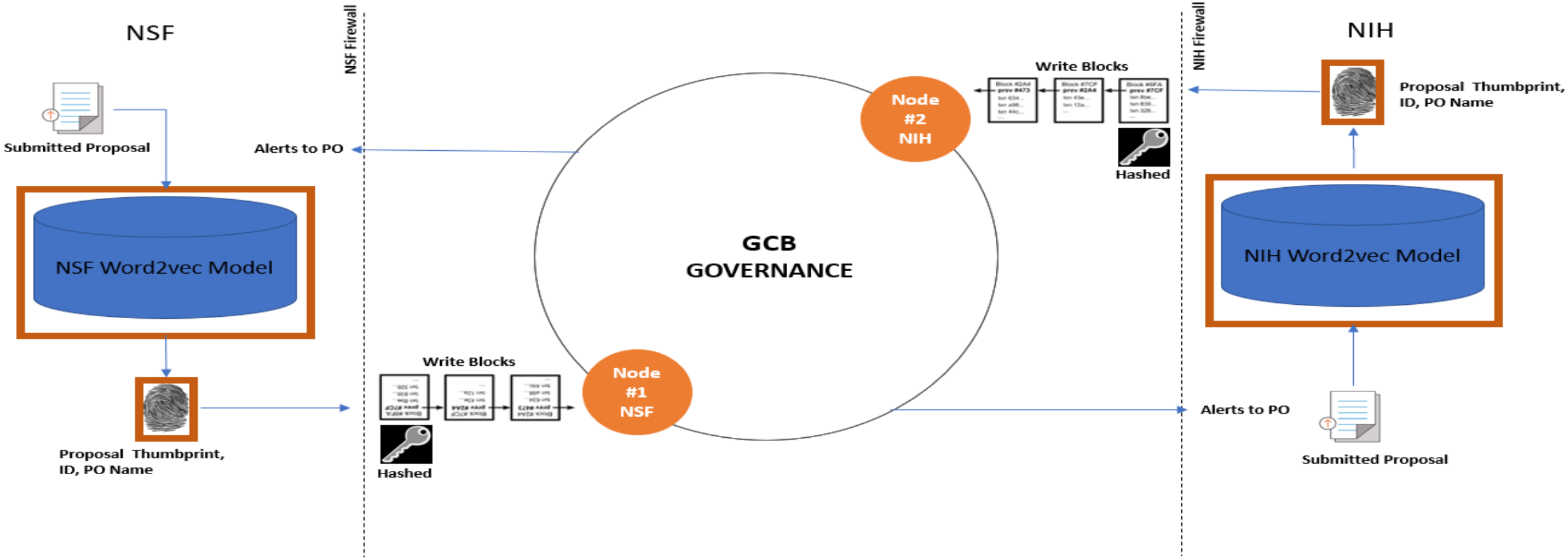
Simplifying Identification of Overlapping & Duplicative Research

- With the help of GSA's 10x program, NSF is exploring emerging technologies to simplify identifying duplicative and overlapping research in grants management
- NSF is testing emerging technologies such as data science and blockchain to solve this challenge. In early 2019, with the help of GSA, NSF formed a partnership with NIH to test this concept
- In October 2019, a cross-agency team between NSF, NIH, and GSA identified a data science technique to encode research proposals called “fingerprints”, which are the key “block” in the “chain” and proved that comparing fingerprints reveals overlapping proposals. In doing so we “liberated” this proposal data while at the same time protecting proposal contents including intellectual property of merit and sensitive information
- The team is currently testing this technique on various domains of science, and exploring ways to build a government wide Distributed Ledger Technology (aka Blockchain) that is available for grants making agencies as a shared-service

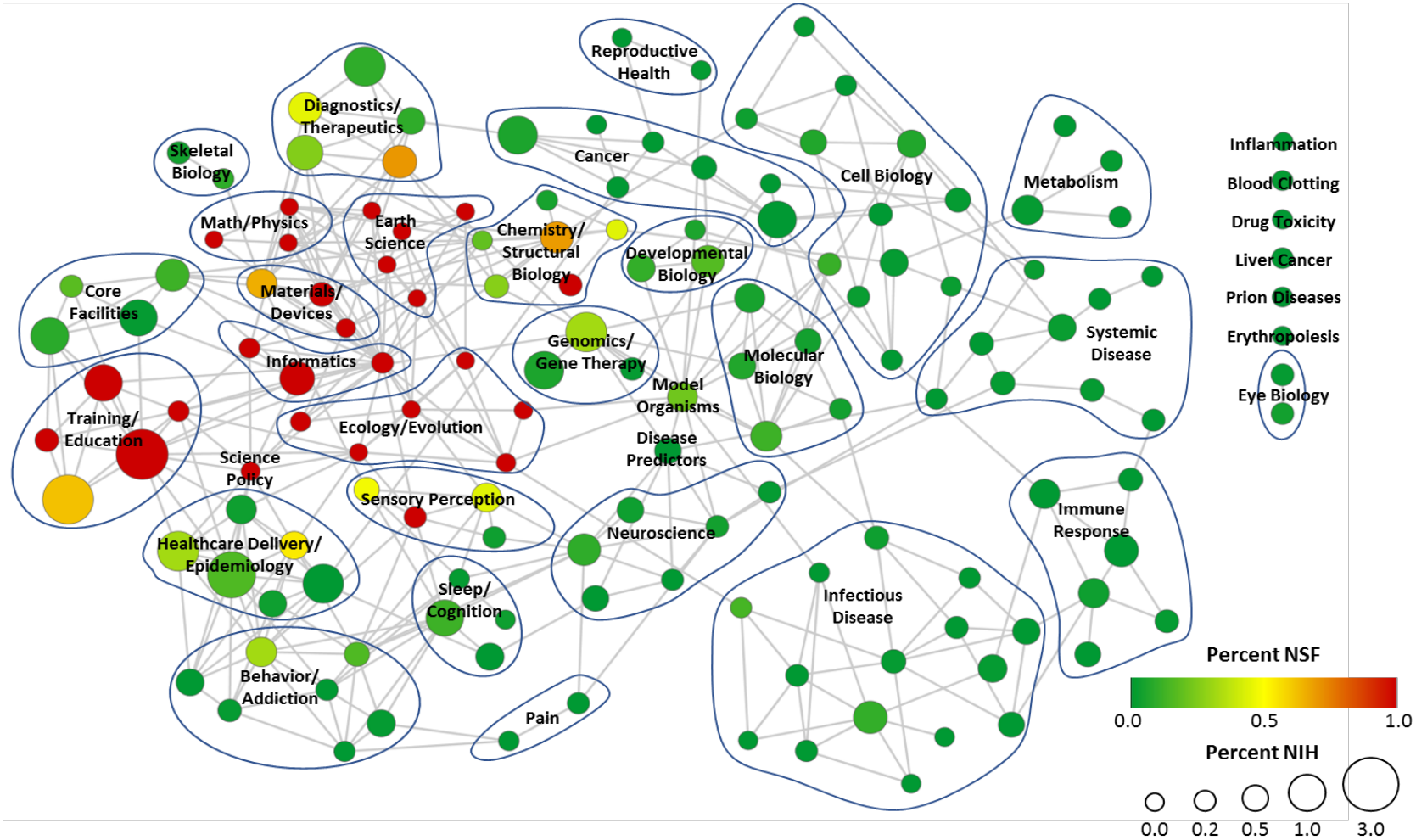
Notional Grants Community Blockchain (GCB)



Notional Grants Community Blockchain (GCB) NSF, NIH Pilot



Sample: a word2vec clustering shows where NIH and NSF portfolios overlap and diverge



BUREAU OF THE
Fiscal Service
U.S. DEPARTMENT OF THE TREASURY

TRANSFORMING FEDERAL FINANCIAL MANAGEMENT

Blockchain Proof of Concept for Multi-Tier Payments

DLT Project Goals and Scope

Project Goals

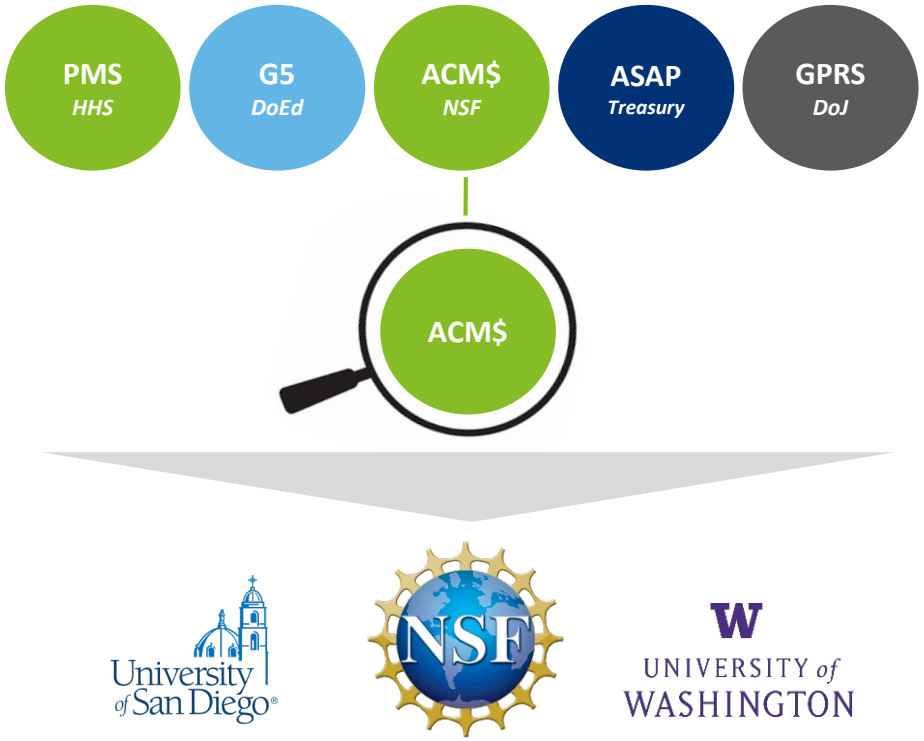
Assess how blockchain/DLT technology could be used to:

- Increase payment efficiency and transparency for sub-recipient payments
- Reduce prime and sub-recipient reporting for Federal payments that “pass through” multiple parties.

Potential areas for further exploration:

- Identify and deter fraud, and reduce improper payments
- Improve user experience (Grantees, Prime Recipients, and Sub-Recipients)
- Assess the benefits, challenges, and impediments to using a blockchain based payment application

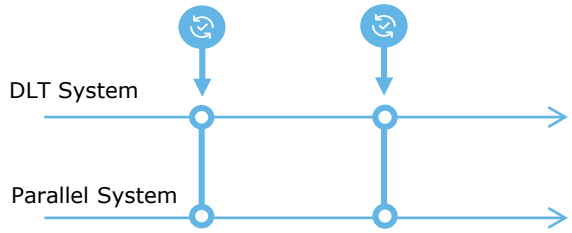
Project Scope



BUREAU OF THE Fiscal Service
U.S. DEPARTMENT OF THE TREASURY

Alternative Approaches to Using Distributed Ledger Technology

<u>Model 1:</u> DLT provides real-time awareness for when transactions occur



MITRE

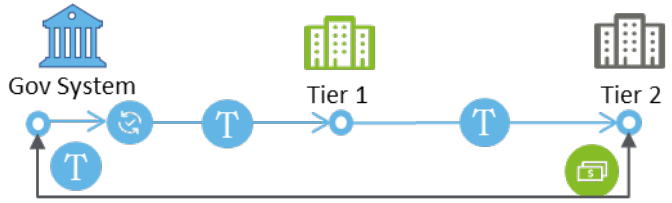
In 2019, Mitre issued a report supporting the use of blockchain as a tracking system for grants payments resulting in enhanced transparency and reduced reporting burden on grantees.

<u>Model 2:</u> DLT turns fiat currency into token and back to fiat

J.P.Morgan WELLS FARGO

In 2019, J.P. Morgan and Wells Fargo created a digital coin on a blockchain enabling instantaneous transfer of payments where 1 coin was redeemed for 1 dollar

<u>Model 3:</u> DLT tokenizes "value" that can be transferred and tracked within a network



HSBC

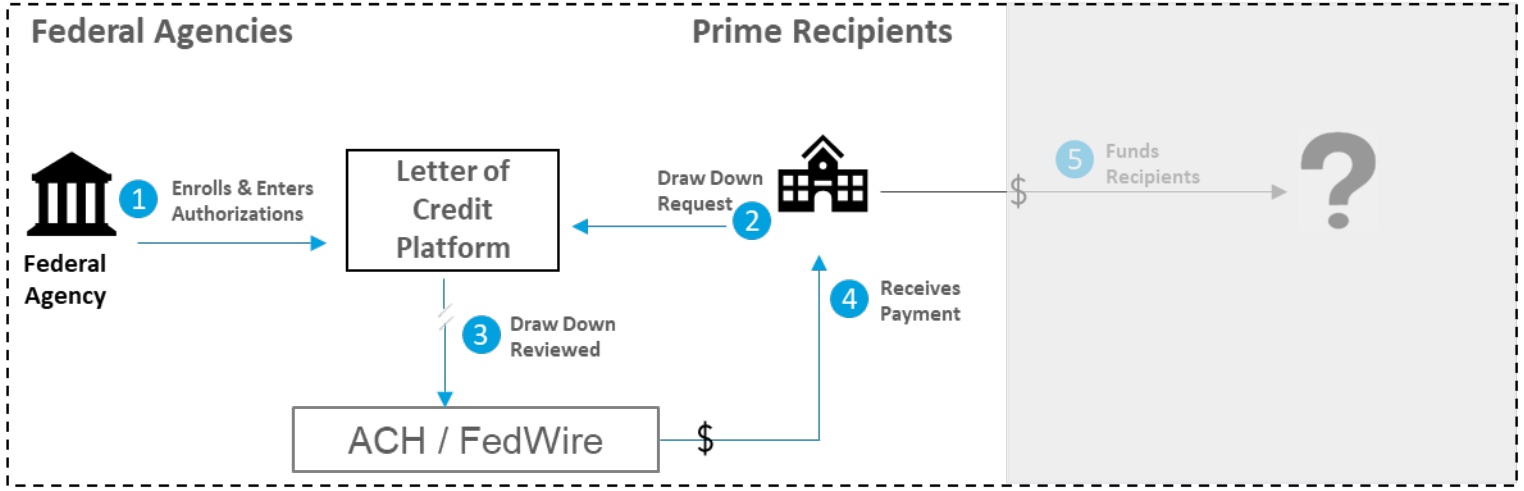
In 2018, HSBC launched the Voltron initiative which digitized a Letter of Credit on a DLT network speeding up payment clearance between banks from 5-10 days to 24 hours

Current PoC Approach

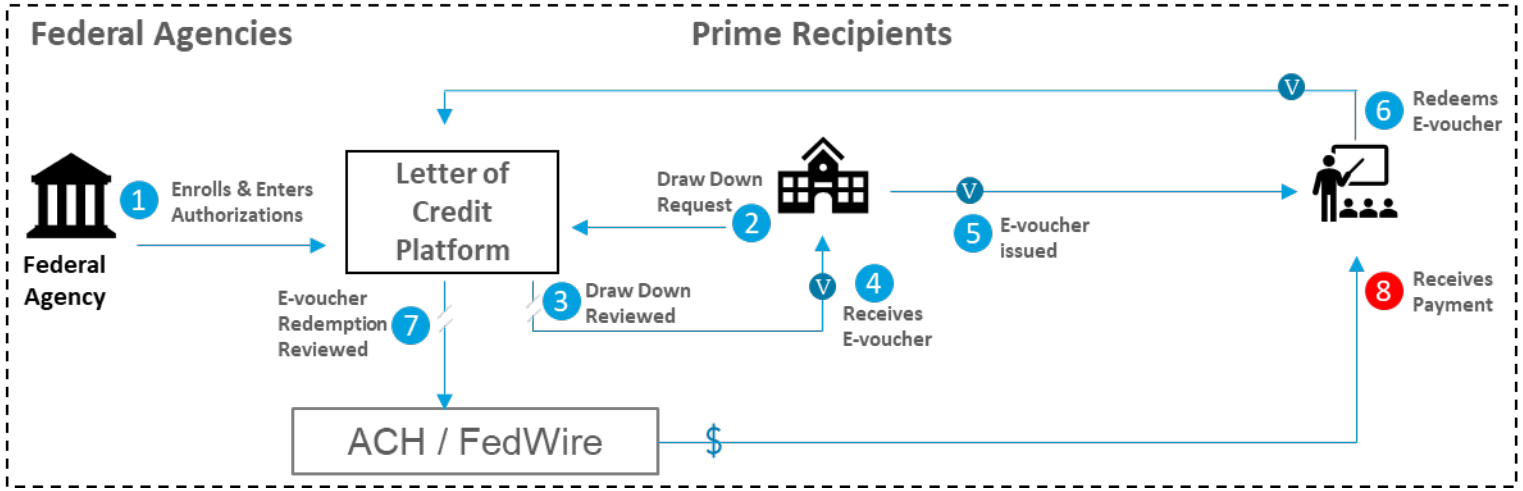
BUREAU OF THE Fiscal Service
U.S. DEPARTMENT OF THE TREASURY

Improving the Letter of Credit Process

Letter of Credit Payment Process – Current State



Letter of Credit Payment Process – with Blockchain



> *Getting paid shouldn't be so hard!*

Stephanie Endy
Associate VP for Research at Case Western University

> *We need better visibility into how federal funds are spent.*

Chris Berner
NSF Section Head, Grants Cash Management Section

BOAC Discussion

NSF seeks advice and perspective on further exploration of blockchain technologies.

1. How do we educate the community and demystify distributed ledger technologies (e.g., do we need a myth busting campaign)?

2. How to scale the use cases, design a governance process and operationalize the tool as an innovative government-wide shared service solution?

3. How do we motivate and get the Research Community excited about this?

Backgrounder: Fall 2019

NSF Advisory Committee for Business and Operations

Nature of Agenda Item: State of the BOAC: A six-year "look back" at the Committee's impact on NSF & assessment of opportunities for the future

Presentation:

NSF is constantly evolving and so must the mission operations and support provided by the Offices of Budget, Finance and Award Management (BFA) and Information and Resource Management (OIRM).

We will review changes that have occurred in the past six years in NSF, BFA and OIRM, in areas such as budget, staffing, strategic and priority goals, and Federal Employee Viewpoint Survey (FEVS) scores. It is particularly important for OIRM and BFA to deliver excellent services and support to NSF even with continuous change.

The BOAC provides valuable advice for NSF/BFA/OIRM to help business operations and to meet its strategic goals. We will review advice from the BOAC over the last six years and assess examples of impacts of the advice.

With the backdrop of both past BOAC advice and the current challenges NSF faces, we look to the BOAC members, particularly those members who will be leaving the BOAC after this meeting, for their observations on serving on the BOAC the last six years and how these learnings can maximize the impact of the BOAC and further improve NSF business operations.

Committee Action/Feedback

We will pose the following questions first to the departing Committee members and then to the members at-large:

1. Please answer one of two optional questions:
    a) Look back: how far we've come and BOAC impact on NSF
    b) Look forward: opportunities to leverage BOAC to benefit NSF/BFA/OIRM over the next 3-5 years
2. In your time on the BOAC, discuss gaps you have observed and how we may address them going forward (i.e. committee size, scope, skill sets, diversity of topics presented, etc.)

Contact Person(s):

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State of the BOAC in 2019

Six-year “look back” at the Committee’s impact on NSF & assessment of opportunities for the future

Charisse Carney-Nunes, BFA

Jeff Rich, OIRM

- Winter Olympics in Sochi
- Malala won the Nobel Peace Prize
- The “eternal” bachelor broke hearts worldwide…
- Mapped material between the stars in the Milky Way
- NSF gearing up to support the May 2015 dedication of new, advanced detectors at Ligo
- Two new dinosaur species discovered in Tanzania

What was happening in the world (and our world) in 2014…

2014 vs. 2019: Budget

2014	2019
NSF Budget: $7.2 billion	NSF Budget: $8.1 billion
AOAM: $306 million (4.3%)	AOAM: $333 million (4.1%)

2014 vs. 2019: Staff Highlights

2014

2019

2014 vs. 2019: BFA Staff Highlights

	2014	2019
FO	Marty Rubenstein Joanna Rom	Teresa Grancorvitz* Janis Coughlin-Piester*
BD	Michael Sieverts Sallie Morse	Caitlyn Fife* Tony DiGiovanni*
DACS	Jeff Lupus	Patrick Breen*
DFM	Shirl Ruffin John Lynskey	Michael Wetklow* John Lynskey
DGA	Karen Tiplady	Jamie French
DIAS	Mary Santonastasso Dale Bell	Dale Bell Alex Wynnyk
LFO	Matt Hawkins	Matt Hawkins

* = New to NSF since 2014

2014 vs. 2019: OIRM Staff Highlights

	2014	2019
FO	Gene Hubbard No Deputy Position	Wonzie Gardner* Javier Inclán*
DAS	Mercedes Eugenia Peggy Gartner	Peggy Gartner Hilary Haight (acting)
DIS	Dorothy Aronson Dan Hofherr	Dan Hofherr Teresa Guillot
HRM	Judy Sunley Gerri Ratliff	Bill Malyszka* Nature McGinn (acting)
Future NSF/ NRO	Mignon Anthony	All moved!

* = New to NSF since 2014

2014 vs. 2019: NSF Strategic Goals

2014	2019
Transform the Frontiers of Science and Engineering	Expand knowledge in science, engineering, and learning
Stimulate Innovation and Address Societal Needs through Research and Education	Advance the capability of the Nation to meet current and future challenges.
Excel as a Federal Science Agency	Enhance NSF's performance of its mission

2014 vs. 2019: Agency Priority Goals

2014	2019
Increase public access to NSF-funded peer-reviewed publications.	Expand public and private partnerships to enhance the impact of NSF's investments and contribute to American economic competitiveness and security.
Improve the nation's capacity in data science by investing in the development of human capital and infrastructure.	By Sept 30, 2010, NSF's number of partnerships and award actions with other federal agencies, private industry, and foundations/philanthropies will grow by 5%, relative to the FY 2017 baselines, to make available infrastructure, expertise, and financial resources to the US scientific and engineering research and education enterprise.
Improve agency and awardee efficiency by leveling the award of grants across the fiscal year.	

2015 vs. 2019: NSF FEVs

	2015	2019	Δ
OPM New Inclusion Quotient ("New IQ")	63	70	+7
OPM Global Satisfaction Index	67	76	+9
OPM Employee Engagement Index	69	77	+8
NSF Career Development Index	60	67	+7
NSF Workload Index	53	58	+5
NSF Performance Management & Recognition Index	61	66	+5

BOAC Summary of Advice

2014 – 2019 Ninety-one Recommendations/Advice

Recommendations/Advice	Covered
NSF, BFA or OIRM Operations	23
Change Management	21
Large Facilities	12
Strategic Planning/Performance	9
Award Administration	9
B&O Internal Operations	6
Human Resources	5
Financial Management	3
Information Technology	2
Virtual Meetings/Technology	1

Advice with Impact

- Enterprise Risk Management (ultimately)
- LFO Subcommittees
- Renewing NSF
- NSF Relocation/Change Management
- FEVs

Advice not Implemented

Two categories

- Not helpful
- Not implemented or only partially implement for other reasons

Questions for Discussants

Then

Now

Future

1. Two options:
   a) Look back: how far we've come and BOAC impact on NSF
   b) Look forward: opportunities to leverage BOAC to benefit NSF/BFA/OIRM over the next 3-5 years
2. In your time on the BOAC, discuss gaps you have observed and how we may address them going forward (i.e. committee size, scope, skill sets, diversity of topics presented, etc.)

Context: Agency Challenges

- Multi-user Facilities
- Balancing Risk/Oversight
- Managing IPA Program
- AIMS
- Encouraging RECR
- Research Security
- Renewing NSF (work and work force; IT modernization)

Questions for Discussants

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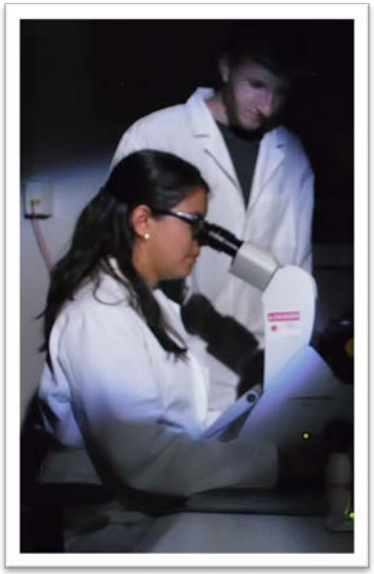
INVESTING IN DIVERSE COMMUNITY VOICES

The Committee on Equal Opportunities in Science and Engineering (CEOSE)

Biennial Report to Congress 2017-2018

September 2019

CEOSE Mission and Background



- Congressionally-mandated advisory committee charged to provide advice to NSF regarding the full participation of women, underrepresentation of racial/ethnic groups, and persons with disabilities in science and engineering

- Biennial report submitted to the NSF Director who transmit the report to Congress
  - State of participation of underrepresented groups
  - Review of NSF's policies and funding opportunities to broaden participation
  - Summary of CEOSE activities during the two-year reporting period and future plans for the next two years
  - Recommendations to the Foundation for improving participation levels of underrepresented groups

State of Participation of Underrepresented Groups in STEM

- An inclusive STEM workforce is needed to maintain US leadership in the scientific enterprise.
- Research has shown that diversity contributes to better learning and problems solving, fuels innovation, and fosters more creative solutions.
- New opportunities must be provided to help the nation increase its use of diverse communities to help solve highly complex, real-world problems.

NSF Investment in Broadening Participation (BP)

- BP is articulated as core value in NSF's strategic plan for 2018-2022, and as a strategic objective: "foster the growth of a more capable and diverse research workforce and advance the scientific and innovation skills of the Nation."
- NSF spent slightly over $1 billion in broadening participation programs and activities in FY 2018.
- NSF's increased commitment to BP is being demonstrated through the Big Idea, NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discovers in Engineering and Science).

Other Commendable NSF Efforts

- Implicit bias training for reviewers
- New term and condition to address sexual harassment: https://www.nsf.gov/od/odi/harassment.jsp
- Recent funding opportunities:

  GEO: Geosciences' Opportunity for Leadership in Diversity (GOLD)

  CISE: DCL-Pursuing Meaningful Actions in Support of Broadening Participation in Computing, known as the CISE BP Pilot

  EHR: Improving Undergraduate STEM Education: Hispanic-Serving Institution (HSI) program, the Historically Black Colleges and Universities (HBCUs) Excellence in Research (EiR); Tribal Enterprise Advancement (TEA) Centers, and the Louis Stokes Regional Centers of Excellence (LSRCE)

CEOSE Activities in 2017 & 2018

Submission and distribution of the 2015-2016 CEOSE Report and Flyer

Six meetings:

- Topics covered: 1) increasing accountability for broadening participation, 2) addressing sexual harassment, and 3) promoting community engagement in science
- Discussions with: 1) NSF leadership and Program Directors, 2) Liaisons from other Agencies, and 3) Outside experts with expertise in diversity and inclusion
- Consensus about future plans: 1) work with NSF to integrate the community-driven/community-based broadening participation strategy, 2) continue to provide advice on how best to address the accountability challenges in the NSF INCLUDES portfolio, and 3) focus future meetings on the themes of inclusion and intersectionality, effective policy development and implementation for increasing STEM employment of individuals with disabilities, and the engagement of minority-serving institutions in groundbreaking research

Elements included in the 2017-2018 CEOSE Report

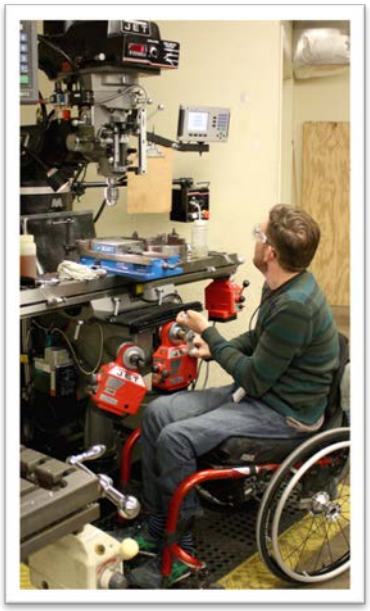
- BP examples throughout the report
- Trend data about broadening participation and the merit review process (Appendix A)
- NSF INCLUDES Awards Directory, FY 2016-2018 (Appendix B)
- Information on HSI Program Awarded Projects FY 2018 (Appendix C)
- HBCU Excellence in Research (EiR) Awards Directory (Appendix D)
- Overview of the 2015-2016 CEOSE Report (Appendix E)
- Examples of NSF-Supported Strategies/Activities/Projects Related to CEOSE's Suggested Practices for NSF's Role in Ensuring Accountability (Appendix F)

Propositions for Understanding the CEOSE Recommendation in the 2017-2018 Report

Applied and theoretical research can be interconnected and mutually enhancing—the integration of theory and practice/implementation research.

1. Significant societal problems cannot be solved without the unfettered full inclusion of underrepresented populations.
2. Full inclusion, in turn, will result in better, more innovative and transformative science and engineering as well as a better more decent and just society.
3. Developing community-based research initiatives that are carried out with community members with a focus on local scientific problems is a promising strategy to help achieve the interrelated goals of full inclusion, stronger science and technology, and a better society.

CEOSE Recommendation to NSF



Give increased attention to
including diverse community voices
across its research and education portfolios
through community-driven projects.

This call to action involves the development and use of frameworks, methodologies, datasets, and effective communication of ideas to be informed by stakeholder and public communities.

Mode	Objective	Origin of research question	Type of relationship	Stakeholder involvement	Stakeholder representation
Contractual	Test applicability of new technology or knowledge	Researchers	Unidirectional flow of information from researchers to stakeholders	Primarily as passive recipient of new knowledge or technology	Views and opinions of stakeholders are not emphasized
Consultative	Use research to solve real-world problems	Stakeholders or researchers	Researchers consult with stakeholders, diagnose the problem, and try to find a solution	At specific stages of research such as problem definition, research design, diffusion of findings.	Stakeholder views primarily filtered through third party (e.g., social scientists)
Collaborative	Learn from stakeholders to guide applied research	Stakeholders	Stakeholders and researchers are partners	Continuous with emphasis on specific activities, depending on joint diagnosis of the problem	Stakeholders themselves, local representatives, trained research team members
Collegial	Understand and strengthen local research and development capacity	Stakeholders	Researchers actively encourage local research and development capacity	Variable, but ongoing	Stakeholders themselves

Meadow, et al. 2015.

Approach to deliberate coproduction	Mode(s)	Type of question	Role of research team	Resources required
Action research	Collegial	• Stakeholder defined • Effecting change for stakeholder • Social/environmental justice focus	• Facilitators, teachers, technical guidance • Support the research of the stakeholder community	• Sufficient time to spend in stakeholder community • Financial (or other) support for stakeholder participants
Transdisciplinarity	Collegial	• Technical question that also has complex political or social impacts	• Equal partners with stakeholders • Facilitators of the process	• Sufficient time to spend on participatory activities
Rapid assessment process	Consultative Collaborative	• Understanding how stakeholders frame an issue; what terms and knowledge systems they use to understand the issue	• Ethnographers—learning about stakeholders' context • Proposing solutions to address issue of concern.	• Social science research training • Travel funds to go to stakeholder community/ organization
Participatory integrated assessment	Consultative Collaborative Collegial	• Scenario planning • Development of integrated models	• Facilitators of participatory processes • Provide technical input	• Sufficient time to spend on participatory activities • Sufficient funds to engage in participatory activities
Boundary organizations	Consultative Collaborative Collegial	• Any of the above	• Purveyors of salient, credible, legitimate science	• Sufficient time to spend on participatory activities • Sufficient funds support boundary organization work

Meadow, et al. 2015.

Suggested Action to be Responsive

CEOSE encourages NSF to continue to provide leadership in increasing the participation of underrepresented groups in the STEM enterprise by partnering with other federal agencies, education institutions, STEM professional associations/societies and other partners, including communities and stakeholders who can collaborate in the co-production of knowledge.