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NSF Advisory Committee for Business and Operations
Electronic Book
Virtual Spring 2024 Meeting
March 4, 2024

Table of Contents

Agenda…… 2

Membership List and Contact Information…… 5

Member Biographies…… 7

Recommendations from Virtual Fall 2022 B&O Advisory Committee……..…….. 18

BFA Update…… 21

OIRM Update…… 27

Budget Update……... 33

OLPA Update…… 49

CDIO Introduction
Backgrounder……..…….. 58
Presentation……... 59

Organizational Health and Performance
Backgrounder……..…….. 67
Presentation……... 68

CIO Introduction
Backgrounder……..... 83
Presentation……... 84

Subcommittee on NSF's Information Technology and Enterprise Architecture
Recommendations Report……... 99
Presentation…….. 102

National Science Foundation
Advisory Committee for Business and Operations
Spring 2024 Virtual Meeting

March 4, 2024
Zoom Webinar

March 4, 2024

11:00 am **Welcome/Introductions/Previous Recommendations**
Co-Chairs: David Mayo and Maureen Wylie

11:15 am **Updates: Annual Conflicts of Interest; BFA; OIRM; Budget/OLPA**

Presenters: Janis Coughlin-Piester, BFA; Wonzie Gardner, OIRM; Caitlyn Fife, BFA; Amanda Greenwell, OLPA

12:00 pm **CDIO Introduction- Current Issues**

Presentation:

Culture is the underpinning to sustainable DEIA. Creating an environment in which all NSF staff can thrive starts with organizational culture and the ability to link DEIA efforts culture. DEIA is the outcome, not the process. This outcome-based thinking not only helps to advance DEIA objectives but also enhance organizational effectiveness. We have an opportunity before us to shape NSF's organizational culture; a culture that not only fosters a sense of trust and psychological safety, but also a culture that furthers NSF mission, increases organizational performance, and leads to greater innovation.

We have a number of high leverage, reinforcing initiatives to move our culture forward, including the Denison Model of Organizational Culture, the Under-representation and Barrier Analysis Tool, the DEIA Maturity Model, the Leader Reflection Tool, the Sexual Orientation and Gender Identity Data Action Plan, the Creating SPACE Program, and our Employee Resource Groups.

We are in the process of rolling out the agency-wide and directorate/office level Denison Organizational Culture Survey results. These results point to culture and organizational effectiveness areas that will strengthen NSF's culture and, in turn, ensure DEIA is sustainable.

Committee Action/Feedback

The CDIO Team pitched an overview of the DEIA program to the National Science Board on February 21, 2024, and it was extremely well received. We look forward to presenting the same overview to the BOAC for feedback and discussion.

Presenter: Chuck Barber, OD/CDIO

12:30 pm **Organizational Health and Performance**

Presentation:

In April 2023, OMB issued a memo to agency heads, "Measuring, Monitoring, and Improving Organizational Health and Organizational Performance in the Context of Evolving Agency Work Environments," (M-23-15). This memo outlined an expectation for federal agencies to substantially increase meaningful, in-person work, as well as to develop mechanisms to assess and monitor organizational health and performance on a routine basis. Specifically, M-23-15 required agencies to 1) develop a Work Environment Plan, 2) establish routines to assess and implement workplace policy changes on an ongoing basis, and 3) identify organizational health and performance metrics to measure, monitor, and improve organizational health and organizational performance and serve as the evidence base for these decisions.

Over the spring and summer of 2023, NSF developed its Work Environment Plan and established new telework and space policies for the agency. These policies required increased in-person work for most staff

beginning in October 2023, and established updated parameters for staff maintaining dedicated work spaces and use of hoteling spaces.

NSF began implementation of organizational health and performance measures and routines in fall of 2023, and is currently working to expand upon these measures to facilitate agency decision-making. NSF reports to executive leadership quarterly on metrics in the following domains: 1) Human Capital, 2) Financial Management, 3) Information Technology, 4) Facilities Use, and 5) Organizational Performance.

Committee Action/Feedback:

NSF is still within its first year of reporting on organizational health and performance metrics under M-23-15, and the reporting period has coincided with implementation of new policies that will likely affect many of these metrics. As we work to mature our processes around assessing organizational health and performance and how those data may inform future management decisions, BFA and OIRM seek BOAC advice on the following questions:

1. Which performance indicators should NSF leadership consider when evaluating its organizational health and performance?
2. What information would these indicators provide?
3. What strategies should NSF leadership employ to enhance its organizational health – resilience, capacity, and capability?

Presenters: Jason Bossie, BFA; Peggy Gartner, OIRM; Theresa Beatty, BFA; Teresa Guillot, OIRM; Victor Powers, OIRM; Lillian Thomas, OIRM; Heather Tompkins, BFA

Discussant: Joe Mitchell

1:30 pm **Lunch Break**

2:00 pm **CIO Introduction- Vision/Key Priorities**

Presentation:

During this session, NSF's new Chief Information Officer (CIO), Terry Carpenter, will introduce himself to the Committee. He will provide an update on the status of the NSF Office of the CIO (OCIO), give an overview of his vision and key priorities for the new Office, and share some of the opportunities and challenges he sees on the horizon for NSF with respect to information technology and data. Terry will give the Committee an opportunity to ask questions about his vision for NSF's information technology and to share their ideas and strategies for helping NSF best navigate organizational and technology changes.

Committee Action/Feedback:

Charge/Questions to the Committee:

1. How can the OCIO best bring expertise to, and facilitate conversations with, BOAC and the Subcommittee on Information Technology and Enterprise Architecture Strategy to support the BOAC's charge to NSF?
2. What strategies and approaches from your institutions can you share that would help guide NSF through this period of organizational and technological changes?
3. How does the BOAC envision the focus/role of the Subcommittee may evolve with the formation and evolution of the OCIO?

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Presenter: *Terry Carpenter, CIO*

2:30 pm **Subcommittee on NSF's Information Technology and Enterprise Architecture Strategy**

Under its Charter, the subcommittee has been charged to prepare a bulleted list of recommendations regarding the direction of IT at NSF, and/or suggestions for leading-edge technologies on the horizon for potential implementation in the upcoming budget year. These recommendations will inform NSF's Capital Planning and Investment Control (CPIC) Board as they identify those ideas to pursue in the upcoming FY 2026 budget year.

The subcommittee has reviewed the NSF IT Strategy and related Architecture to provide informed recommendations for changes in process, direction, and/or potential investment in new and emerging technologies.

Committee Action/Feedback:

- The BOAC liaisons (Tilak Agerwala and Bill Valdez) submitted the subcommittee's recommendations to the BOAC co-chairs (via NSF BOAC staff) on February 14, 2024, and on behalf of the co-chairs, NSF BOAC staff shared it with the full BOAC as a pre-read for this meeting.
- During the meeting, the BOAC liaisons will present a summary of the subcommittee's findings and recommendations and discuss and deliberate the subcommittee's advice.
- At the close of the BOAC's discussion, the BOAC will:
  - Accept the subcommittee's recommendations
  - Reject the subcommittee's recommendations; or
  - Send the subcommittee's recommendations back to the subcommittee for revisions.
- The BOAC may also provide additional written feedback to NSF, including any comments or opinions the BOAC has to offer regarding the report or its findings and recommendations by way of a cover letter to the NSF Designated Federal Officers (DFOs).
- Once the recommendations are accepted, the BOAC will submit them to NSF for the agency to make it publicly available.
- After receiving the recommendations, the NSF DFOs may, verbally or in writing, comment on or respond to them at any duly organized BOAC meeting.

Presenters and Discussants: Tilak Agerwala and Bill Valdez, BOAC

3:30 pm **Break**

3:45 pm **Preparation for Meeting with Dr. Panchanathan, Dr. Marrongelle and Ms. Teresa Grancorvitz**

4:00 pm **Meeting with Dr. Panchanathan, Dr. Marrongelle and Ms. Teresa Grancorvitz**

5:00 pm **Wrap-Up/Adjourn**

National Science Foundation
Business and Operations Advisory Committee

Membership List

(a/o February 28, 2024)

Dr. Tilak Agerwala
Technologist-at-Large, Professor, IBM Vice President (Retired)
Email: tilak.agerwala@gmail.com

Dr. Benjamin L. Brown
Director, Facilities Division
Office of Advanced Scientific Computing Research
U.S. Department of Energy Office of Science
Email: ben.brown@science.doe.gov

Dr. Shawn T. Brown
Senior Director of Platform Engineering
HPC & AI Cloud Services
Hewlett-Packard Enterprise
Email: stbrown@psc.edu

Ms. Kathleen Dahlberg
CEO
Galileo Group International
Email: Dahlbergk@aol.com

Ms. Irene Kariampuzha
Deputy Director, Museum Operations,
National Museum of American History
Email: kariampuzhai@si.edu

Mr. Larry Koskinen
Advisor on Enterprise Risk Management, Deloitte
Retired Federal Executive and Risk Management Consultant
Email: lkoskinen@deloitte.com

Dr. James Martin
Vice Chancellor of STEM Innovation and Research
University of Pittsburgh
Email: jrmartin@pitt.edu

Mr. David Mayo *
Senior Director for Research Administration
California Institute of Technology
Email: David.mayo@caltech.edu

Dr. Joseph Mitchell
Director, Academy Programs
National Academy of Public Administration
Email: jmitchell@napawash.org

Dr. Robert Nobles
Vice President for Research Administration
Emory University
Email: robert.e.nobles@emory.edu

Benjamin Page
Senior Advisor to the Secretary for Implementation
Officer of the Secretary of Commerce
Email: BPage@doc.gov

Gregory Parham
Senior Advisor
U.S. Department of Agriculture
Email: gparham@att.net

Mr. William J. Valdez
President
Global Innovation Associates LLC
Email: billvaldez777@hotmail.com

Ms. Maureen E. Wylie *
Federal Chief Financial Officer (Retired)
Email: Maureen.E.Wylie@gmail.com

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

Dr. Barbara Endemaño Walker
Director, Strategic Research Initiatives
University of California-Santa Barbara
Email: barbara.walker@ucsb.edu

*** Committee Co-chairs**

NSF Business and Operations Advisory Committee
Member Biographies ~ 2024

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

Tilak Agerwala focuses on applying technology to advance social good, improve education, and accelerate discovery. He is Head of Innovation and STEM at the not-for-profit ed-tech startup Turn the Bus, Advisor to HekaCloud, Executive-in-Residence at Grove School of Engineering, City College of New York, Adjunct Associate Professor at Pace University, New York, Adjunct Professor at the National Institute for Advanced Studies, Bangalore.

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 of 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 a member of the NSF Advisory Committee on Business and Operations and has served on the Engineering and Advanced Cyber Infrastructure Advisory Committees. He was the 2019 Dr. S. Radhakrishnan Chair Visiting Professor at the National Institute of Advanced Studies, Bangalore, India. Tilak is a Life Fellow of the IEEE and a recipient of the W. Wallace McDowell Award from the IEEE Computer Society. He has a Bachelor of Technology in electrical engineering from the Indian Institute of Technology, Kanpur, India, and a Ph.D. in electrical engineering from Johns Hopkins University. From 1975-78, he was assistant professor of Electrical Engineering at the University of Texas, Austin.

Dr. Benjamin L. Brown
Director, Facilities Division, Advanced Scientific Computing Research
U.S. Department of Energy, Office of Science

Dr. Benjamin (Ben) Brown is the Director of the Facilities Division in the Office of Advanced Scientific Computing Research (ASCR). The Division leads and executes the conception, construction, and operation of DOE's world-leading research supercomputing, data, and networking infrastructure to enable the DOE mission and the national research enterprise. The Division's $620M (FY 2022) budget is devoted to operations and major upgrade projects at each of the ASCR Facilities: the Argonne Leadership Computing Facility, the Oak Ridge Leadership Computing Facility, the National Energy Research Supercomputing Center, and the Energy Sciences Network. As Director, Ben leads strategic planning, budget formulation, and operational oversight of these strategic national resources. 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. He is a member of the federal Senior Executive Service.

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. Shawn Brown
Director, Pittsburgh Supercomputing Center
Vice Chancellor for Research Computing, University of Pittsburgh

Dr. Shawn T. Brown is the Vice Chancellor for Research Computing at the University of Pittsburgh and the Director of Pittsburgh Supercomputing Center at the Carnegie Mellon University & University of Pittsburgh. Prior to his appointment, Dr. Brown served as the Associate Director of Research Software Development at the McGill Centre of Integrative Neuroscience at the McGill Neurological Institute. Dr. Brown is an expert on high-performance computing and computational simulation. He has over 25 years of experience in developing software to support the use of high-performance computing for research in areas such as chemistry, bioinformatics, and public health. His research interests are also focused on how agent-based modeling and other computational techniques can be used to provide decision support in public health and chronic disease. He received his PhD. in theoretical chemistry from the University of Georgia and his Bachelor of Chemistry at Bethany College.

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.

Ms. Kathleen Dahlberg
Chief Executive Officer, Galileo Group International, Inc.

Kathleen Dahlberg has over 35 years of executive experience leading technology initiatives delivering measurable improvements and creating business opportunities. She achieved these results with start-ups and Fortune 500 international companies. This included business model creation, funding and cost management; and delivering technology investment returns. Kathleen has led the definition and design of new technologies and brought them to market as industry-wide products.

Ms. Dahlberg served as Vice President McDonalds Worldwide Restaurant Solutions creating and launching the next generation of store technologies 2002 - 2004. She served as Vice President - e-business at BP Amoco from 1997 to 2001 where she led e-business ventures and development for the world's third-largest energy company. Ms. Dahlberg was Chief Information Officer and Vice President Downstream systems and system operations US and Internationally for BP Amoco. She also served as Vice President of Advanced Technologies at Viacom International, and from 1987 to 1996 Ms. Dahlberg was with Burger King Corporation where she held a series of senior executive positions including Vice President of Business Transformation, Vice President of Strategic Planning and Reporting, and Vice President of Worldwide Retail Systems.

Ms. Dahlberg has provided strategic technology services for new technologies, businesses leveraging technologies and acted as project assurance/risk partner. This includes the creation and eventual sale of Global One Ventures (G1 Surgeries - ultimately sold to SMS and Optum Healthcare. Advice services for GHRA in Houston, Zebra Technologies, Sesame Street/Children's Network, International Paper, WW Grainger, Career Education Corporation, T-Mobile, and Dohman Pharmaceuticals.

Kathleen has served on the Board of Directors for P. H. Glatfelter (GLT) and Theragenics (TGX) and Chairperson for Governance Committees, and member of Audit and Compensation Committees. For young companies, she was a board member of Vmeals (Vice-Chairman),and Silas Technology.

Ms. Dahlberg holds a BS in Communications Consultancy, Oklahoma State University, and a MSM in Management, Aurora University with advanced management and board work with Harvard, Stanford and University of Chicago focusing on governance, risk management and oversight.

Ms. Irene Kariampuzha
Senior Advisor
United States Department of Agriculture

Irene Kariampuzha has been with the Smithsonian Institution for over 10 years. She has been with the Smithsonian's National Museum of American History since 2018, first as an associate director overseeing budget, finance, procurement, human resources, business programs, facility planning and operations, safety, internships and fellowships, and information technology. In her current role since 2023 as the Museum's Deputy Director of Museum Operations, she oversees the administrative and operational functions of the museum, which includes her previous responsibilities plus visitor services, project management and exhibit design and production services. She also serves on Smithsonian committees that look at improving various HR and financial processes and procedures. She managed the museum's response to the pandemic, including the implementation of telework and hybrid work and coordination of teams within the museum to meet safety, health, and reopening requirements. In addition, Irene serves as a member of the board for the Smithsonian Early Education Center.

Prior to her role at the National Museum of American History, Irene was an associate director in Smithsonian's Office of Planning, Management and Budget. In that role, she formulated and managed Smithsonian's central trust (non-federal) budget and fundraising campaign budget, which includes revenue sources from the Smithsonian endowment, gifts, grants, contracts, and net gain from businesses. She developed the Institution's annual budget plan and quarterly reports presented to the finance committee of the Board of Regents. Irene also managed the Smithsonian Directives process and the efforts of the Directives Review Council, which wrote, reviewed and revised Smithsonian policy directives.

Irene also served as a program examiner for the Science and Space Programs branch at the White House Office of Management and Budget (OMB) for 10 years. She examined policy, federal budget, management, legislative and regulatory matters for the National Aeronautics and Space Administration, White House Office of Science and Technology Policy (OSTP), Smithsonian Institution, National Endowment for the Humanities, National Endowment for the Arts, U.S. Holocaust Memorial Museum, Woodrow Wilson International Center for Scholars, U.S. Commission of Fine Arts, National Capital Planning Commission, and several small scholarship foundations over her time there. She also detailed as the examiner for the National Science Foundation (NSF) and was detailed to NSF's Office of Budget, Finance and Award Management. Irene coordinated and analyzed government-wide research and development and arts and cultural funding and policy issues within OMB and worked on those efforts with the White House Domestic Policy Council and OSTP. Irene represented OMB on various National Science and Technology Council subcommittees.

She began her career at RAND as a research assistant for the Science and Technology Policy Institute, analyzing quantitative and qualitative R&D data for OSTP and other federal R&D agencies to inform U.S. science and technology policy.

Irene has her B.S. in Chemistry from Duquesne University and her M.A. in Science.

Mr. Larry Koskinen
Retired Federal Executive
Consultant on Enterprise Risk Management

Larry Koskinen has served the public interest for more than forty-five years through executive positions in the federal government, commercial professional services firms, and non-profit organizations—both within the United States and abroad. He currently consults with the Government and Public Sector Enterprise Risk Management practice at Deloitte.

He is a retired member of the Federal Senior Executive Service most recently serving as Chief Risk Officer at the United States Department of Housing and Urban Development, where he led HUD's departmental enterprise and fraud risk management programs. During his tenure HUD earned a positive reputation for innovative approaches to the use of advanced data analytics and computational linguistics to identify, understand and remediate program and administrative control weaknesses. In 2021 he was inducted into the Association of Federal Enterprise Risk Management Hall of Fame.

Prior to standing up the Office of the Chief Risk Officer at HUD Koskinen led the Business Transformation Team for NewCore, HUD's administrative shared services partnership with the Treasury Department Administrative Resource Center, and, at the invitation of the United States Office of Management and Budget, led the project team that drafted the government-wide playbook for federal shared services adoption. Prior to joining HUD, he served as an executive in the federal Inspector General community, managing data analytics, finance, human capital, information technology, strategic planning and support operations at the Treasury Inspector General for Tax Administration and the U.S. Postal Service Office of Inspector General. He has been involved in multiple federal-level government reform efforts, notably the Reagan-era Grace Commission, and the Clinton-era National Performance Review.

Koskinen was a Vice President at the non-profit Council for Excellence in Government (programs of which are now absorbed into the non-profit Partnership for Public Service), and a Vice President at the international development consultancy Development Alternatives, Inc. Prior to that he was Director of Administration and Finance at the non-profit Regional Environmental Center for Central and Eastern Europe in Budapest. He was Management Officer for Peace Corps International Operations and also Chief Business Architect. He served as a Peace Corps Volunteer in the Philippines.

Dr. James Martin, II, Ph.D., M. ASCE
Vice Chancellor for STEM Research and Innovation
University of Pittsburgh

James R. Martin, II, is Vice Chancellor for STEM Research and Innovation at the University of Pittsburgh, where he drives transformative initiatives ranging from the university's core STEM landscape to regional campuses. Focused on enhancing Pitt's $1.3 billion research portfolio and expanding STEM access, he leads collaborations to spawn new research growth, builds innovation ecosystems, and connects rural areas to city centers via urban-rural research bridges. As a senior advisor and thought leader, he influences national action from the White House to major funding agencies to think tanks. Locally, he is a board member for Pittsburgh Water and Sewer Authority and was a foundational advisor for Neighborhood 91 at Pittsburgh International Airport.

Before assuming his current role, Dr. Martin served as U.S. Steel Dean of Engineering at Pittsburgh. Under his leadership, the Swanson School of Engineering achieved unprecedented milestones, including record research expenditures, PhD students, first-year enrollments, faculty and student diversity, retention, graduation rates, annual giving participation rates, and novel industry and government

partnerships, including national labs. He played a pivotal role in the university's COVID-19 response, co-chairing the central task force with the provost.

Prior to Pittsburgh, Dr. Martin served as the Bob Benmosche Professor and Chair of the Glenn Department of Civil Engineering at Clemson University. His leadership resulted in the development of new curricula and degree programs, record research growth, and innovative partnerships with industry. He chaired the strategic plan for the engineering college, advocating for expansion of regional innovation campuses, and served as founding director of the Risk Engineering and Systems Analytics Institute (RESA), a pioneering collaboration between academia and industry.

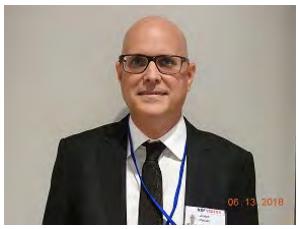
Preceding Clemson, Dr. Martin served over two decades at Virginia Tech as a professor of civil engineering and six years as a university center director. He built an international reputation in geotechnical earthquake and risk engineering, creating major impacts on national building codes. Leading global teams following major earthquakes, Martin led field studies in Turkey, Japan, and the U.S., and served as director of the Disaster Risk Management Institute. He played a foundational role in broadening participation and expanding diversity across the College of Engineering, serving nearly a decade as co-leader of an NSF-sponsored URM program. As an internationally recognized expert, he has served as consultant to nearly 100 different firms and government agencies worldwide on major infrastructure projects.

Dr. Martin received a B.S. in civil engineering from The Citadel, and earned his M.S. and Ph.D. in civil engineering from Virginia Tech. He has received numerous national, state, and university awards for research, teaching, scholarship, and service, including the American Society of Civil Engineer's Norman Medal, the highest honor for published work in his field. He was inducted into Virginia Tech's Civil Engineering Department's Academy of Distinguished Alumni in 2015. His dedication to broadening participation, fostering innovative collaborations, and regional engagement continues to shape STEM education, research, and innovation.

Mr. David Mayo
Senior Director for Research Administration
California Institute of Technology

David Mayo is the Senior Director for Research Administration at the California Institute of Technology. In this capacity he is responsible for pre-award and post-award non-financial services supporting $422M in research awards annually. David is directly responsible for review and interpretation of existing and emerging government policies and regulations, development of institutional policies and procedures, and development and implementation of training programs for campus staff in the area of research administration. Prior to his appointment at Caltech in 2002, David led the pre-award office at the University of California, Santa Barbara, where he worked in research administration in various capacities since 1981.

David has been a member of his professional association, the National Council of University Research Administrators (NCURA) since 1988 . David served as NCURA President in 2008, received its *Distinguished Service Award* in 2009, and received NCURA's highest honor in 2012, the *Outstanding Achievement in Research Administration Award.* David has served on numerous NCURA working groups and committees. He is a content creator for NCURA's on-line and in-person training programs, as well as a frequent presenter at its national and regional conferences on topics such as: federal and industry contracting, regulatory compliance, subcontracting, subrecipient monitoring and award management. David currently participates in the Federal Demonstration Partnership and is a member of its Subawards and Contracts Subcommittees. David also participates in the Council on Governmental Relations as a member of its COVID-19 Federal Award Impact Workgroup.



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.

Dr. Robert Nobles
Vice President for Research Administration
Emory University

Dr. Robert Nobles (DrPH, MPH) serves as the Vice President for Research Administration at Emory University. Within Emory Nobles leads the research administrative and compliance departments including Clinical Research, Environmental Health and Safety, Institutional Animal Care and Use Committee, Institutional Review Board, Research Administration – IT, Research Administration Services, Research Compliance and Regulatory Affairs, Research Grants and Contracts, Sponsored Programs, Strategic Operations and Training and Technology Transfer with more than 450 team members providing outstanding services that catalyze research and operational excellence. Daily, Nobles and team are responsible for providing the foundation for the research growth that Emory continues to experience

while pursuing discovery. As an example of scope, in fiscal year 2020, Emory received nearly $895 million in total research funding awards. Of the overall total, $598.9 million came from federal research funding awards, led by the National Institutes of Health with $526.2 million. Emory researchers submitted 4,750 proposals to sponsors totaling $1.487 billion in 2021.

As the Vice President for Research Administration, Nobles promotes Emory's research growth through oversight and execution of a strategic direction and effective operations for research across Emory. Nobles works in tandem with senior leaders and faculty to ensure proactive, user-focused customer service; effective, metric-driven processes; and transparent communication, to further new and on-going research initiatives that comply with all regulatory requirements. Nobles also fosters the scholarly work of faculty, facilitates multidisciplinary initiatives, supports innovative technology-transfer and commercialization programs, and strives to increase funding support from all sources, while nurturing positive external relationships.

Nationally, Nobles serves as the Vice Chairperson on Board of Directors for Public Responsibility for Medicine & Research (PRIM&R), the Executive Committee for the Federal Demonstration Partnership (FDP), and a member of the National Science Foundation's (NSF) Advisory Committee for Business and Operations (Committee).

Prior to joining Emory University, Nobles served as the interim Vice Chancellor for Research and Associate Vice Chancellor for Research at the University of Tennessee, Knoxville, (UTK) with a faculty appointment in the Department of Public Health within the College of Education, Health, & Human Sciences. While at UTK, Nobles led efforts and oversaw research growth and compliance activities related to a UTK's quest to become a top 25 public research institution. Nobles also served as a sub-investigator on more than 10 community- based research projects focusing on adolescent health, and chaired national and local committees focusing on enhancing research culture. Before UTK, Nobles served as the research compliance officer and public health faculty member at both Texas A&M University and the University of Texas Health Science Center in Houston. In the public sector, Nobles served as a public health prevention specialist for the Centers for Disease Control and Prevention (CDC) and as a program manager for the state of Florida's Department of Public Health.

Nobles completed his Doctor of Public Health at the University of Texas Health Science Center in Houston with a triple major that included health policy & management, epidemiology, and health economics; and he received his master's in Public Health specializing in epidemiology, and a bachelor's degree in molecular biology from Florida A&M University. Nobles is an avid educator and has taught on the collegiate level since 2001 in the areas of environmental biology, anatomy and physiology, public administration, health policy and management, health care finance, ethics, epidemiology, and responsible conduct of research.

Dr. Ben Page
Senior Advisor to the Secretary for Implementation
Officer of the Secretary of Commerce

Ben is serving as a Senior Advisor to the Secretary of Commerce supporting implementation of Commerce's infrastructure and other large scale programs. In this capacity, he is coordinating cross department efforts to ensure successful implementation of these high priority initiatives and serving as the Department's liaison to the White House Infrastructure Implementation Taskforce.

From June of 2019 through the start of current detail assignment in Ben served as the Census bureau's chief financial officer. While at Census, Ben has oversaw efforts to secure and execute FY 2020 appropriations, provide acquisition support to the 2020 Decennial census, and improve the positions of the bureau in the annual financial statement audit. He implemented process changes and financial

changes to ensure alignment of the operations of the Office of the Chief Financial Officer with program operations and the use of financial data to support enterprise business decisions.

Prior to joining the Census Bureau, Ben served as chief of the Commerce Branch at the U.S. Office of Management and Budget (OMB). At OMB, he worked with the Department of Commerce, Small Business Administration, Federal Communications Commission, and other related agencies to develop and execute the President's budget. In this capacity, he worked closely with White House policy councils, congressional stakeholders, and leadership at the Department of Commerce to develop and implement policy recommendations through the enactment of legislation, promulgating regulations, or taking administrative actions. In addition, his office at OMB was responsible for carrying out OMB's statutory responsibilities for spectrum management and advising the director on policy matters related to spectrum and telecommunications.

In his previous role at OMB, Ben served as an advisor to three different OMB directors.
His responsibilities included covering macro fiscal issues; working with the House Budget Committee covering science, space, and energy policy; and serving as a budget analyst responsible for national security and criminal justice issues. Ben received a bachelor of arts in public administration from the University of Tennessee and a master's in public policy from George Washington University.

Dr. Gregory Parham
Senior Advisor
United States Department of Agriculture

Dr. Gregory Parham was employed by the United States Department of Agriculture (USDA) for more than 35 years and retired in 2017, after serving as an Assistant Secretary of Agriculture in the Obama administration. During his career, he was the recipient of Presidential Rank Awards for Distinguished and Meritorious Service. He subsequently completed the Advanced Leadership Initiative Fellowship at Harvard University. Recently, he returned to Federal service as a Senior Advisor at USDA.

Trained as a veterinarian, he began his Federal government career in the U. S. Public Health Service as a Commissioned Corps Officer at the Center for Disease Control in Atlanta, GA. After joining USDA in 1982 he worked for several agencies and became a career member of the Senior Executive Service, serving as the Administrator of the Animal and Plant Health Inspection Service. Dr. Parham is board certified in veterinary preventive medicine and holds a degree in administrative science from the Johns Hopkins University, as well as, degrees in veterinary medicine and microbiology from the Ohio State University.

Dr. Parham has two grown sons and one grandson and resides with his wife of 43 years in Mitchellville, MD.

Mr. Bill Valdez
President
Global Innovation Associates LLC

Bill Valdez is a recognized science and technology thought leader who has successfully led science and technology programs in the Federal government and made significant contributions to the effectiveness of government programs to deliver improved mission value to American taxpayers.

Bill retired from the Federal government in 2014 and became an adjunct faculty at American University's Key Leadership Program and began consulting with public and private sector organizations to provide

strategic advice on a wide ranging set of issues, including science policy and government modernization/improvement.

Most recently, Bill was the President of the Senior Executives Association (SEA), where he focused on strengthening the Senior Executive Service (SES) through legislative and policy initiatives, building a leadership pipeline for the Executive Branch, working with a broad range of good government groups to modernize the civil service, and restoring a public service ethic to the Federal government.

Bill was a co-editor/author of the *Handbook of Federal Government Leadership and Administration: Transforming, Performing, and Innovating in a Complex World,* and was an author of the IBM Center for the Business of Government's recent report, *Preparing the Next Generation of Federal Leaders: Agency-Based Leadership Development Programs*.

His career with the Department of Energy spanned over 20 years and he held the positions of Director, DOE Office of Economic Impact; DOE's Chief Diversity Officer; Director of Business Services, Office of Energy Efficiency and Renewable Energy; and Director of Planning and Analysis, and Director for Workforce Development within DOE's Office of Science. During this time, Bill became expert in the both programmatic and policy development, along with the operational side of the house including HR, procurement and IT.

From 2005-2014 Bill was the Co-Chair of the Science of Science Policy Interagency Working Group. This IWG sparked a government-wide effort to understand the impact of Federal government S&T programs and to develop tools, data and analytical techniques that are in common use at Federal science agencies today. Agencies are also using those tools and data to provide Congress with better budget proposal analyses and to inform taxpayers about the important benefits S&T programs bring to our Nation.

In addition, Bill was a senior advisor at the White House Office of Science and Technology Policy (OSTP) in the 1990s. Bill was awarded the Presidential Rank Award (meritorious) in 2007 and was elected as a Fellow of the American Association for the Advancement of Science (AAAS) in 2006.

Prior to working at DOE, Bill worked as a Senior Project Manager in private industry where he provided strategic planning services to Asian and European multinational corporations. He also was a reporter in Austin, Texas.

Bill received a Bachelor of Arts from the University of Texas and his Master of Arts in International Economics and Energy Policy from the Johns Hopkins School of Advanced International Studies.

Ms. Barbara Endemano Walker
Director, Strategic Research Initiatives
Special Assistant to the Executive Vice Chancellor for Diversity Initiatives
UC Santa Barbara

Barbara Endemañ Walker serves as the Research Developement to the Director of Strategic Research Initiatives in the Office of Research, and the Special Assistant to the Executive Vice Chancellor for Diversity Initiatives at the University of California Santa Barbara. She is responsible for catalyzing research innovation and excellence through institutional strategic planning, mentoring and professional development activities with faculty members, and a portfolio of diversity and inclusion initiatives related to faculty development and research.

She leads national and state-wide projects that focus on broadening participation in higher education in the context of the research enterprise. Through the Center for Research, Excellence, and Diversity in Team Science (CREDITS), she oversees programs that increase the capacity for diverse

science teams and provide tools for university leadership to enact institutional transformation. She also leads the California Alliance for Hispanic-Serving Social Science Advancement (CAHSSA) which strengthens community-based research and public scholarship in the social sciences to align with the Hispanic-serving mission of the majority of institutions of higher education in California. In addition, she collaborates with the Hispanic Association of Colleges and Universities (HACU) on a project to address the challenge of improving Latinx graduate degree attainment in STEM through a national alliance among the community of HSIs.

Endemaño Walker's research and publications focus on broadening participation in higher education and STEM, the political ecology of marine resources, and gender and the environment. Her research has been funded by the National Science Foundation, the MacArthur Foundation, NOAA Sea Grant, the Social Science Research Council, and the Department of Education. Results of her research have been published in Gender Place and Culture; the Journal of Geography and Higher Education; Society and Natural Resources; PLOS ONE; and the Professional Geographer, among others. She was a founding board member and officer of the National Organization of Research Development Professionals (NORDP), and is a past council member and officer of the Alliance of Hispanic Serving Institution Educators (AHSIE). She received a Ph.D. and M.A. in Geography from UC Berkeley and a B.A. in Anthropology and African Studies from UCLA.

Ms. Maureen E. Wylie
Federal Chief Financial Officer (Retired)

Maureen Wylie currently serves on the Board of Directors for SquashWise, which focuses on academics, athletics, and opportunity for Baltimore's youth, as a part of the Squash and Education Alliance. She is also a member of the Partnership for Public Service Senior Advisors to Government Executives (SAGE) program.

Ms. Wylie served as Chief Financial Officer of the U.S. Nuclear Regulatory Commission from July 2014 to December 2019, when she retired and ended her nearly 35-year career in the federal government. She was responsible for all budgeting and financial management for the agency, as well as a critical leader for its Project Aim and Transformation efforts.

While at NRC, Ms. Wylie spear headed efforts to create authoritative data not just for financial management, but also for nuclear reactor and materials program management. She conducted multi-year business process change initiatives that transformed how the agency charged fees to licensees and made the application of data analytics possible. As a member of the government-wide Chief Financial Officers' Council, Ms. Wylie served as its representative on the Technology Business Management Executive Steering Committee (ESC), leading the first full adoption of information technology cost transparency in support of that Cross-Agency Priority (CAP) goal. She was also integral to the Financial Data Transformation (ESC), bringing together the Council's data and information efforts associated with several CAP goals and with efforts to improve transparency in budgeting, financial management, and performance goals.

She previously served as the Chief, Resource and Operations Management for the National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce from January 2012 through July 2014. She was the principal executive for all matters related to the NOAA's Corporate Services. Prior to that assignment, she also served as NOAA's Chief Financial Officer from 2004. During that period, she led financial management and budgeting for the largest bureau of the Commerce Department as it responded to increasing mission demands in its critical weather, satellites, and fisheries regulatory functions.

Ms. Wylie also served as the G8, Resources Army National Guard (ARNG), responsible for resource management for the Army National Guard from October 2001, capping nearly twenty years as a

Department of the Army civilian in a variety of resource management, base realignment and closure, and facilities management roles. Special assignments during this period included stints at HQ, US European Command J-5, the Congressional Research Service, and the House Armed Services Committee Staff.

A recipient of many awards while with the Army, including the Pace Award for leadership in 1994, she received a Distinguished Executive Presidential Rank Award in 2009 and the NOAA Administrator's award in 2011. Ms. Wylie is the recipient of the Association of Government Accountants 2020 Elmer Staats Award, which recognizes a federal leader who exemplifies excellence in government financial management, outstanding leadership, high ethical standards, and innovative management.

She began government service in 1985 as an Army Presidential Management Intern. Ms. Wylie graduated with honors from Rutgers University with a BA in Political Science in 1982, from Yale University with an MA in International Relations in 1984; and was a 1999 Distinguished Graduate of the Industrial College of the Armed Forces, with an MS in National Resource Strategy. She is also a member of the 1997 class of the Defense Leadership and Management Program and a 2003 graduate of the Federal Executive Institute.

Title	Meeting Date	Fiscal Year	Recommendation	NSF Contact(s)	Status	Explanation/Outcome	Theme
IT Enterprise Achitecture (EA) SubCommittee	Fall 2022	FY23	**1. IT supporting a modern workforce** a) Promoting continuous workforce improvement through comprehensive and integrated management systems for onboarding, training, and talent management. b) Identification, prioritization, and adoption of best-in-class industry and community solutions. c) Implementing reliable identification through Common ID platforms (e.g. commercial of the shelf (COTS) and government off the shelf (GOTS) solutions for identity management).	Aronson, Dorothy; Kaplan, Nancy	OPEN - Partially Implemented	1.a) Expanded ServiceNow to provide a streamlined onboarding and clearance process for new employees and contractors; an improved customer experience with simplified access to HRM services from a unified customer portal; 1.b) HRIT is currently conducting a cross-functional evaluation of Human Capital Management (HCM) platforms to identify a product that supports position management, learning management, and workforce planning. The HCM solution will replace manual, fragmented workforce planning processes with an integrated, automated system that will better support succession planning and enable dynamic talent management. 1.c) Deployed a common platform called Employee Service Center (ESC) which combines Human Resource Management (HRM) and IT Help Central (ITHC) to host administrative services for both HR and IT services.	Information Technology
IT Enterprise Achitecture (EA) SubCommittee	Fall 2022	FY23	**2. Enabling external stakeholders** a) Building or acquiring tools to facilitate developing and operationalizing partnerships between NSF customers and making it easier for new kinds of partnerships between NSF and customers/groups by: 1) maintaining a list of all internal and external collaboration tools, 2) retiring legacy collaboration tools, and 3) promoting tools that foster collaboration in a hybrid setting. b) Fostering partnerships across industry, becoming a facilitating partner for these relationships and influencing how discovery is shared in a manner that accelerates transfer to impact (government use, lab-to-market, commercialization, etc.).	Aronson, Dorothy; Kaplan, Nancy	OPEN - Partially Implemented	2.a) Working to retire SharePoint 2016 and move to SharePoint Online and other MS365 tools such as Teams. 2.b) In partnership with the Directorate for Technology, Innovation and Partnerships (TIP), NSF has deployed a partnership tool called PARTA, which enables us to combine all sources of partnership data into one place. Additionally, NSF is prioritizing deployment of a 'volunteer-to-review' tool, which will allow the users to partcipate in NSF efforts.	Information Technology
IT Enterprise Achitecture (EA) SubCommittee	Fall 2022	FY23	3. Responding to changing mission priorities a)Organization and prioritization i.Maintaining a clear understanding of key resources including: 1.Developing a common data inventory across NSF (including data from and common across the CIO, CISO, and CDO). 2.Maintaining a central repository of internal and external users, with no more than two authentication methods (one for internal and one for external). 3.Developing a lifecycle strategy for all IT assets and applications. ii.Building and maintaining a central dashboard for key metrics for all key IT initiatives and posting a high-level annual summary on NSF's public website. b)Organizational complexity i.Aligning the organization to sustain a highly resilient operating environment yet flexible enough to pivot quickly based on evolving responsibilities or varying pace of initiative execution. ii.Using automation tools (organizational visibility tools) to help solve the documentation/transparency problem. Developing clear, documented, and dynamic metrics/KPIs and track these over multiple quarters and years.	Aronson, Dorothy; Kaplan, Nancy	OPEN - Partially Implemented	3.a) EDGE implemented a data inventory across NSF, creating data dictionaries across all data inventories. The Enterprise Data Inventory (EDI) is NSF's authoritative source for internal data assets. All assets includes a data dictionary, metadata and data lineage. Most recently, NSF is working to add student information from the Education and Training Application (ETAP), PARTA, and HRM ServiceNow. The EDI provides a consistent, authoritative source for information for internal agency use. NSF is continuing to maintain and grow its external-facing dashboard, "NSF by the Numbers", which tracks key metrics and initiatives. 3.b) This and previous BOAC Subcommittee recommendations were one factor in driving NSF to form a new office, tentatively named, the Office of the Chief Information Officer (OCIO), which will bring all IT planning and execution under one office and CIO. In this way, NSF can position itself with the right structure and resources to best position the Agency's IT functions to work even more effectively and efficiently throughout the Agency to include the establishment of clear metrics.	Information Technology

IT Enterprise Achitecture (EA) SubCommittee	Fall 2022	FY23	**4. Investing in Data and Artificial Intelligence (AI)** a)Developing an AI inventory to ensure sure there are synergies between the responsible officials for AI and the CDO. i. Aligning the AI strategies across the official responsible for AI, the CIO, and the CDO. ii. Ensuring coordination for the training of the NSF workforce and stakeholders on AI. iii. In concordance with the "Executive Order on Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government", compliance with the required principles of AI should be required for all NSF grants. iv. Per their AI Inventory, NSF currently does not possess or utilize any AI systems for agency operations; NSF should identify and pilot use cases to advance its mission. v. Incorporating AI-specific requirements into the NSF's data strategy and NSF's IT strategy. vi. Ensuring there are IT policies in place to guide and manage the use of AI across the Agency. vii. Establishing working groups and communities of practice to ensure the acceleration and adoption of AI. viii. Ensuring that all AI use cases are inventoried, and their training data is included in the data inventory. b)AI and Data Driven Upskilling and Training of the IT Labor Force i.Investing in data technologies to upskill and empower NSF employees is critical to achieving significant number of NSF goals under DIS CCB, DISKO, EDGE, HRIT, FSMWG and IMG pillars. Given the wide-ranging goals of NSF and with employee being at the center of success of these goals, we recommend the following: 1.Transforming all employees to data consumers with easy access to data and low code data tools to encourage innovation and collaboration across cross functional organizations. 2.Standardizing AI development and deployment with tools that fit the variety of user persona spanning business users to data scientists to help with swift deployment of innovations and continuous improvements. 3.Training and upskilling to transform to Data/AI-First organization to unleash the creativity of the employees on wide ranging operational, customer and employee experience, and innovation goals.	Aronson, Dorothy; Kaplan, Nancy	OPEN - Partially Implemented	4.a) NSF has a plan to enhance the Data strategy to include AI. The Agency also published "NSF's Artificial Intelligence (AI) Policy" in August 2023, which sets forth NSF's criteria and process for the review and approval of AI applications. The NSF AI policy is pursuant to Executive Order (EO) 13960, "Promoting the Use of Trustworthy Intelligence in the Federal Government", which requires federal agencies to inventory their AI use cases and share their inventories with other government agencies and the public. Dorothy Aronson has been named the Chief AI Official in response to the EO. 4.b) This year NSF has put together the Data Compentency Framework and are working with HRM in order to impelement. IMG established R&D Innovation Labs to enable rapid prototyping and experimentation on emerging technologies to solve agency challenges and explore solutions. In the past year, multiple experiments have been completed to leverage AI/ML/NLP applied to multiple use cases that augment capabilities of staff as the foundation anticipates an increase in volume of proposal submissions and review in the next few years. These experiments are executed by a cross-functional team consisting of subject matter experts and technical staff. The experiments also provide opportunities to upskill in the latest AI technologies and tools.	Information Technology

IT Enterprise Achitecture (EA) SubCommittee	Fall 2022	FY23	**5. IT Excellence** a)Building tools for internal NSF customers and making it easier for new kinds of partnership between NSF and customers/groups. i.Maintaining a list of all internal and external collaboration tools. ii.Retiring legacy collaboration tools. iii.Promoting tools that foster collaboration in a hybrid setting. b)Cyber infrastructure and Security i.Cyber and Compliance/ Zero Trust Architecture (ZTA)—This is a required by law and needs to be a foundational part of the NSF's IT strategy. ii.Formulating a public IT strategic plan that includes the Cybersecurity priorities – including ZTA. iii.mplementing robust repositories and inventories of data, applications, users, and IT resources to support ZTA. Invest in a modern, software-defined network with capable cyber defenses to facilitate authenticated flows. iv.Centralizing and secure all logs to allow rapid analytics with privacy and control. v.Assessing NSF's Cybersecurity Operations using a reputable agency. Ensuring funding is allocated to address any deficiencies and consider leveraging one of the Government shared service providers.	Aronson, Dorothy; Kaplan, Nancy	OPEN - Partially Implemented	5.a) NSF will be expanding Power Platform for the enterprise in early FY24 to include licenses for the whole Agency. This will enable better and more efficient communication and citizen developers to make their own local applications and facilitate better collaboration. Also continuing to promote and standardize enterprise tools for collaboration across the Agency and retiring legacy tools as needed (ex: WebEX). 5.b) In accordance with the Federal Zero Trust Strategy published as OMB Memorandum M-22-09, "Moving the U.S. Government Toward Zero Trust Cybersecurity Principles", the Agency drafted the "National Science Foundation Zero Trust Strategy Implementation Plan" in March 2022. NSF's ZTA plan includes efforts to enhance comprehensive security monitoring; expand the implementation of granular risk-based access controls; and increase system security automation in a coordinated manner throughout all aspects of the infrastructure to focus on protecting data in real-time within a dynamic threat environment. Further, NSF has already implemented many actions in support of zero trust architecture principles. NSF leverages the Department of Homeland Security's Continuous Diagnostics and Mitigation (CDM) program for asset inventory and information sharing; fully deploys endpoint detection and response capabilities; maintains a Vulnerability Disclosure Policy; and implements immutable workloads in the NSF Amazon Web Services (AWS) cloud environment. NSF has also made significant progress in the implementation of enterprise identity management and multifactor authentication; encryption of data in transit and at rest; software security testing; implementing a secure internet accessible system; and auditing encrypted data in NSF's AWS cloud environment.	Information Technology

Office of Budget, Finance, and Award Management (BFA) Update
Spring 2024 B&O Advisory Committee Meeting

Topics

BFA Senior Staff Changes

Program Management Improvement Accountability Act

Government Accountability Office Review of NSF Major Research Equipment and Facilities Construction (MREFC)-funded Projects

Advanced Monitoring and Audit Resolution

Proposal & Award Policies & Procedures Guide

Award Performance Reporting Compliance Challenges

Customer Experience

Government-Invoicing

Financial Statement Audit

Accountability Reports

Management Challenges

Enterprise Risk Management

Performance

Budget Summary

BFA Senior Staff Changes

- Division of Acquisition and Cooperative Agreements (DACS)
  - *Deputy Division Director* – In March 2023, Ms. Charlean Thompson was selected as the Deputy Division Director of DACS. Charlean joined NSF from the Administrative Office of the U.S. Courts, where she served as Deputy Procurement Executive providing leadership and oversight to their $1 billion acquisition portfolio. Ms. Thompson has more than 20 years of federal experience in acquisition, financial assistance, and other transaction management and policy oversight.
- Division of Institution and Award Support (DIAS)
  - *Division Director* – In February 2023, Dr. Quadira Dantro was appointed DIAS Division Director. Quadira joined BFA from the U.S. Department of the Treasury, Office of Recovery Programs, where she was the Director of Recipient Reporting. She has more than 15 years of federal experience in grants management and policy oversight.
- Division of Financial Management (DFM)
  - *Deputy Division Director* – In January 2024, Mr. Jesse Simons was selected as the Deputy Division Director after John Lynskey retired. Mr. Simons is a seasoned financial management leader with 16 years of experience in the public and private sectors leading teams in integrating financial business processes, data, and technology to enhance operations, provide new insights, manage risks, and optimize end-user experiences. Most recently, Jesse was DFM's Branch Chief, Payments and Analytics Branch.

Program Management Improvement Accountability Act (PMIAA)
NSF is implementing a project plan for the next steps on PMIAA implementation. The project plan includes supervisor and staff training on the use of competency assessments, position description revisions, and the implementation of the Office of Personnel Management's PMIAA "identifier" to show positions which fall under PMIAA. Supervisor meetings are planned for Q2 FY 2024 to provide context on competency modeling and begin promoting good practices for staff development based on the assessment results.

The final PMIAA core competency guidance has been approved by the Facilities Governance Board. This guidance, the PMIAA assessment reports, and other documents have been provided to GAO to support closing their final open recommendation (GAO-19-227).

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."

Government Accountability Office (GAO) Review of NSF MREFC-funded Projects
In December 2023, GAO published its 2023 report (GAO-24-106380). The report included one new recommendation to improve cost estimate on the Antarctic Infrastructure Modernization for Science (AIMS) project. The GAO technical team accepted NSF's proposed actions related to both AIMS and the Antarctic Recapitalization Program in early January 2024. NSF's corrective action plan is currently going through clearance for transmittal to Congress by May.

GAO acknowledged in both their 2022 and 2023 reports that NSF has taken steps to address the remaining recommendation from GAO's 2018 report to improve the project management skills of its staff. With approval of the PMIAA core competency guidance, this remaining recommendation is now considered implemented by NSF. GAO is currently assessing the guidance for sufficiency.

Annual GAO engagements are required by Congressional report language. The 2023/2024 review is underway.

Advanced Monitoring and Audit Resolution
The status of the Division of Institution and Award Support (DIAS), Resolution and Advanced Monitoring Branch advanced monitoring and oversight activities is as follows:

- The 2024 annual risk assessment was completed in Q4 2023, and selection of site visits and desk reviews has been completed. NSF is executing the plan.
- During FY 2023, DIAS:
  - Closed 108 outstanding issues or concerns identified during various monitoring activities in previous years.
  - Disallowed a total of $93,245 in unallowable costs under 27 Post-Award Adjustment Reviews.
  - Made management decisions to resolve nine OIG external audit reports with a total of $738,384 questioned costs and $538,682 disallowed costs.
  - Took final actions under OIG external audit reports to implement 184 recommendations and recover $1,805,341.
  - Resolved 143 single audit reports with $656,930 questioned costs and $305,068 disallowed and recovered costs.

Proposal & Award Policies & Procedures Guide

The *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) (NSF 24-1) was published in January 2024, and is effective for proposals submitted or due on or after May 20, 2024. The PAPPG is comprised of documents relating to the Foundation's proposal and award assistance programs and has been designed for use by both the NSF proposer and recipient community and NSF staff. The Summary of Changes outlines the changes in the new PAPPG.

The Policy Office, in DIAS, has scheduled outreach to internal NSF staff (March 5, 2024) and to the broader research community (March 12, 2024), to discuss the changes in this PAPPG.

Award Performance Reporting Compliance Challenges

The Project Reporting Implementation Team (PRIT), established at the direction of the BOAC, initiated a pilot in September 2023 intended to improve the timeliness of annual reports. The pilot is testing whether targeted communication and withholding future payments will improve the timeliness of annual project report submissions. The awards within the scope of the pilot include those from three Divisions with overdue annual project reports as of October 1, 2023, and awards that became overdue through February 1, 2024.

In October 2023 and in monthly increments thereafter, recipients began receiving formal notifications that future payments may be withheld if they do not have an approved project report. If the recipient remains non-compliant and has not submitted a project report of sufficient quality within 60 days of the initial notification (when the project report is 90 days overdue), the recipient receives a formal notification that future payments are withheld until the annual project report is submitted and approved by NSF.

Initial findings from the target population are promising, and over 95% of the targeted awards have submitted and approved annual project reports, which is significantly higher than other non-participating Divisions within NSF and there have been very few awards where future payments have been withheld. Further, the pilot has identified opportunities for NSF to clarify the annual project reporting requirements and deadlines. As the pilot is reaching its conclusion, the PRIT is analyzing the data further and developing recommendations for consideration and looks forward to sharing more with the BOAC in future meetings.

Customer Experience

In spring 2023, BFA convened a cross-agency group to examine NSF's opportunities to improve customer experience (CX) with external stakeholders. NSF customers are defined as funding seekers, science seekers (e.g., educators, learners, science communicators), reviewers, and (prospective) partners; two key NSF customer communities include Principal Investigators and research administrators. NSF provides support to these groups in various ways, such as through research and research infrastructure funding, fostering new scientific opportunities, STEM education, and innovative partnerships. The work of this group resulted in the following recommendations: 1) establish a CX community of practice, 2) identify leadership CX champions, and 3) establish definitions and data sources for CX metrics.

In fall 2023, BFA stood up an NSF-wide CX community of practice, leveraging CX expertise among OIRM colleagues. The CX community of practice is charged with establishing a culture of CX at NSF and advising on development of NSF's CX infrastructure. The group convenes monthly to exchange best practices and learn from internal and external agency partners who have engaged in CX work in the Federal context. With over 100 members and increasing participation in just 6 months, the NSF CX community of practice demonstrates strong employee engagement and increased potential for innovation and impact. BFA has also dedicated FTE and funding resources to improving the experience of the research administrators and

other stakeholders with which BFA engages. This work may also inform implementation of recommendations related to establishing CX metrics.

Government Invoicing (G-Invoicing)
NSF implemented G-Invoicing for Orders and Performance. G-invoicing is a common online platform for federal partners to originate and manage interagency agreements (IAAs) and to exchange that data with one another for consistent financial reporting. This implementation strengthens NSF's automation, transparency, and controls over IAA business processes.

Financial Statement Audit
NSF published the financial statement audit report in chapter 2 of the FY 2023 Agency Financial Report. The final audit report indicated an unmodified (clean) opinion, and no material weaknesses or significant deficiencies were identified in the internal controls program for financial reporting. An unmodified opinion means the auditor concluded that the financial statements and accompanying notes are presented fairly, in all material respects (by U.S. Generally Accepted Accounting Principles) and relative to NSF's mission and stewardship of those resources entrusted to the agency. In addition, NSF continues to comply with the Chief Financial Officer's Act of 1990, as amended, and the Office of Management and Budget requirements.

The Office of Inspector General's (OIG) kick-off meeting for the FY 2024 audit will be held in mid-March 2024.

Accountability Reports
- NSF's FY 2023 Agency Financial Report focuses on financial management and accountability and was published in November 2023.
- NSF's FY 2023 Performance and Financial Highlights Report is a 4-page report that provides key financial and performance information to our stakeholders and the American people. This will be issued on March 11, 2024, when the FY 2025 President's Budget Request to Congress is rolled out, and published here.

Management Challenges
The Office of Inspector General (OIG) issued the *Management Challenges for the National Science Foundation in Fiscal Year 2024* to NSB leadership and NSF in October 2023. The OIG dropped one long-standing challenge on major facilities/research infrastructure and added a new challenge specific to sexual assault and harassment in Antarctica. The OIG maintained a separate challenge on, "Addressing Harassment in the Academic Community," established in FY 2023. The OIG also broadened the scope of two long-standing challenges. A challenge previously focused on grants management now applies to all funding instruments and one on human capital issues specific to IPAs has been broadened to encompass additional human capital issues such as growth in staffing and new telework and space management policies. In January 2024, NSF had the kick-off meeting with Challenge Owners to address the schedule and plan for developing NSF's progress report on the FY 2024 Management Challenges.

The FY 2024 Management Challenges identified by OIG are:
- Overseeing and Managing Risks of Sexual Assault/Harassment in Antarctica **[new]**
- Addressing Sexual Harassment in the Scientific Enterprise
- Increasing Diversity in Science & Engineering Education and Employment
- Overseeing the United States Antarctic Program (USAP)
- Overseeing NSF's Funding Portfolio in a Changing Environment **[modified]**
- Managing Human Capital **[modified]**

- Mitigating Threats to Research Security
- Mitigating Threats Posed by the Risk of Cyberattack

NSF's response to the FY 2023 Management Challenges is in chapter 3 of the FY 2023 Agency Financial Report.

Enterprise Risk Management (ERM)

During FY 2023, NSF continued to evolve its ERM program and focused on improving communication and relationships between offices and research directorates. This effort included the development of program-level ERM guidance, as well as facilitating discussions on risk management for emerging partnerships and new recipient communities. In September, the Division of Financial Management provided a year-end ERM report to the NSF CXO Council and COO to provide support for the Director's Assurance Statement to support the agency financial statements.

To further improve NSF's ERM program, there will be several initiatives in FY 2024. These initiatives will include expanding the distribution of risk management guidance at the program level, creating a risk management framework for new types of awards, and enhancing our analytical capabilities to gain more insights into risks at the enterprise level.

Performance

Agency Priority Goal

NSF's final quarterly report for its FY 2022-2023 Agency Priority Goal to "Improve representation in the scientific enterprise" was posted to OMB's Performance.gov site on January 25.

NSF is currently finalizing its Action Plan for the FY 2024-2025 Agency Priority Goal which is expected to be released publicly in April. The FY 2024-2025 iteration of the goal will continue to focus on improving representation by increasing the proportion of proposals with Principal Investigators from groups underrepresented in STEM and from Emerging Research Institutions by 10 percent. This emphasis on Emerging Research Institutions aligns with the CHIPS and Science Act.

Annual Performance Plan and Report

The combined plan and report will be released with the FY 2025 Congressional Request and is currently under review by OMB. It will be published here on March 11, 2024.

Budget Summary

FY 2023 Update

FY 2023 year-end close activities concluded in November 2023, and Budget's internal database was locked. Obligation actuals by account and organization will be published in the FY 2025 Budget.

FY 2024 Update

- The FY 2024 Budget Request is $11.354 billion, or +19.0% over FY 2023 Enacted Base.
- The House appropriations subcommittee mark is $9.63 billion, or +1.0% above FY 2023 Enacted Base and -15.2% below FY 2024 Request.
- The Senate appropriations committee mark is $9.50 billion, or -0.4% below FY 2023 Enacted Base and -16.3% below FY 2024 Request.
- NSF is operating under a continuing resolution through March 8, 2024.
- The Budget Division is doing preliminary work on the FY 2024 Current Plan letter and supporting tables, preparing for the passage of the appropriation.

FY 2025 Update

- NSF FY 2025 Congressional Request will be rolled out on March 11, 2024 and published here.

FY 2026 Planning - expected to begin in late winter/early spring 2024.

Supplemental Funding Available

Carryover of supplemental funding received in FY 2023 is for no-year funds (Polar) and 2-year funds. The amount, purpose, and anticipated FY 2024 Q for obligation by account will be provided in the Congressional Justification when it is released in March 2024.

National Science Foundation
Summary of Supplemental Funding Available in FY 2024
(Dollars in Millions)

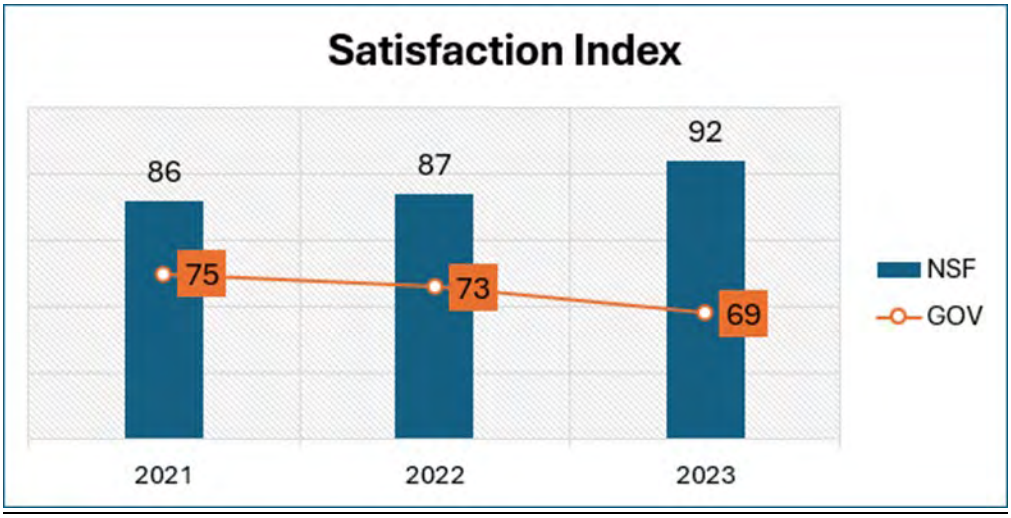
Item	Carryover to FY 2024	Available Balance (2/22/2024)
R&RA – DRSA Div N		
R&RA Supplemental Base	$65.5	$64.5
R&RA Supplemental R&D Competition & innovation	$154.4	$0.0
STEM EDU – DRSA Div N		
EDU Supplemental R&D Competition & innovation	$92.2	$87.0

DRSA: Disaster Relief Supplemental Appropriation Act (P.L. 117-328 [Consolidated Appropriations Act, 2023, Division N])

OIRM Update
for the B&O Advisory Committee Meeting (Spring 2024)

Accolades and Accomplishments

- The Division of Human Resource Management (HRM) led the federal enterprise in the Hiring Manager Satisfaction Survey, which supports the Chief Human Capital Officers Council driven General Services Administration Customer Satisfaction Survey. Even while working on improving the agency's time to hire and onboarding process, NSF's 2023 Hiring Manager Satisfaction index score remained **the highest amongst all federal agencies at 92,** and over 96% of survey respondents stated that they would choose to work with the same HR staff again on future hiring actions. Additionally, as reflected below, where government scores have decreased for three consecutive years, NSF scores increased and peaked this last year.



Reentry to NSF Headquarters and Moving Towards a Hybrid Workplace

- **Hybrid Workforce**: HRM positioned the Foundation to face the future of work by providing new workplace flexibilities and human-centered design-based ways to both collaborate and communicate with one another This included clearly defining remote work, telework, and work schedule flexibilities, a new Telework and Work Schedules System, and the establishment of the Team Norms Program.

- To provide facility enhancements to NSF staff and optimize the utilization of space for collaboration and other business needs, the Division of Administrative Services (DAS) is **converting west wing mail and copy rooms on floors 5, 7, 8, 9, and 10 to team rooms**. The team rooms will provide fully functional, smaller-scale, conference rooms supporting the hybrid work environment with dual large monitors and Neat Bar technology. Renovation started in mid-October 2023 and will be completed in February 2024.

Innovations in Human Resource Management

- The **Telework and Work Schedule System** was updated and moved to the cloud-based Employee Service Center to streamline and update the overall process employees use to submit telework, remote work, and work schedule requests in accordance with the new telework and work schedule policies.
- NSF launched the **Student Loan Repayment Program** in May 2023 as a recruitment or retention tool for highly qualified candidates and employees. Through this program, eligible employees may be considered for repayment assistance of their federally insured student loans up to $10,000 per calendar year, with a $60,000 lifetime maximum.
- The Foundation retired the staffing and recruitment system, Monster, and switched to the Office of Personnel Management's **USA Staffing**. USA Staffing provides a better user experience for both the hiring manager and the applicant. Hiring managers can see the status of their requested actions in real time. The system comes with a library of user guides, videos, and OPM-supported assistance. HRM is using this opportunity to evaluate current processes and products for areas for improvement to make the benefits of this new system even greater for customers.
- The **Administrative Position Description Modernization (ADPM)** work group was created in response to feedback from the administrative workforce to improve position equity and advance opportunity within NSF's administrative/non-scientific positions. This group has made great progress after a full year of collaborative efforts throughout the Foundation. After thousands of reviews and assessments of existing position descriptions, industry benchmarking efforts, and auditing administrative work functions alongside NSF stakeholders and subject matter experts, HRM presented three new options to NSF's Executive Leadership Team and gained support on a standard model to serve as the baseline for implementation in FY24. The APDM project team and HRM Leadership have an active and exciting year ahead, with many more communications planned to discuss fine-tuning the new model, expanding many new administrative career opportunities this year, and distributing several new hiring manager resources in 2024.
- HRM's **Talent Team** provides hiring managers and search committees with the tools to identify the vital competencies needed to successfully perform the duties of a position and, thereby, find the best quality candidate. The Talent Team works with customers to develop custom selection tools and rating guides, including structured interview questions, writing assessments, work samples and simulations, subject matter expert resume reviews, and other resources.
- HRM made important updates to NSF's **Personnel Policies**. Highlights include:
    - Successfully updated the Telework and Remote Work policy in partnership with AFGE 3403, as staff are expected to return to the building at least four days per pay period. Furthermore, the policy changes led to modernizing the Telework and Work Schedule System and ensuring staff have sufficient time to review and gain supervisory consideration and approval to return to the building at least four days per pay period.

Significant Advances in Administrative Services

- **Automating and Modernizing Services to Reduce Administrative Burden**
  - In partnership with the Division of Information Services (DIS), DAS initiated modernization activities using Microsoft Power Platform, including:
    - Automating micro-purchases, which are defined as the acquisition of supplies or services that do not exceed the threshold of $10,000. Automation will reduce audit findings and improve compliance with the Federal Acquisition Regulation.
    - Automating the budget formulation collection process known as the Future Year Resource Planning Process.
    - Automating certain property management processes not currently available in the Integrated Workplace Management System.

- **Enhancing NSF's Facility to Accommodate Where the Future Works**
  - DAS initiated a renovation project **to support NSF's newest Directorate, the Directorate for Technology, Innovation and Partnerships (TIP).** Renovation began in early February and is scheduled to be completed in late June. Staff will relocate to their new workspace in early July. The renovated space will provide half of floor 6 for TIP and will collocate staff who are currently dispersed throughout the building in consolidated space.

- **NSF's New Workspace Management Policy – Reimagining the Future of Space**
  - On September 18, 2023, the NSF Director announced the new NSF Workspace Management policy. The Workspace Management policy outlines workspace arrangements and eligibility while describing the workspace selection process. The policy identifies a requirement of five or more days per pay period in the office to maintain a permanent workspace.
  - The new Workspace Management policy, in coordination with the Telework and Remote Work policy, helps to address several challenges from a space perspective. First, it will right-size the seating assignments from the previous three years, allowing everyone who elects to maintain a workspace to do so while providing a fair and equitable approach to selecting a workspace. Second, the policy supports alternative workspace arrangements to include workspace sharing or hoteling. Finally, the policy supports greater occupancy and utilization of workspaces throughout the building and space flexibility.

- **Implementation of the Federally Mandated Controlled Unclassified Information (CUI) Program**
  - Delving into the realm of data science, DAS created a CUI data analytics dashboard. The dashboard was designed primarily for the CUI Program Manager in DAS, as well as for directorate-level senior executives, and it provides a visual depiction of the staff's usage of the CUI marking tool by directorate. It also assists in measuring program performance by depicting marking trends over a specified period such as staff usage trends per week, per month, and year. The CUI data analytics dashboard will assist NSF in terms of monitoring and making data-driven adjustments to the program.

Enhancements in Information Technology

- NSF smoothly **transitioned all Proposal Preparation and Submission functionality to Research.gov** and decommissioned FastLane Proposal Preparation and Submission in late January 2023. The Research.gov Proposal Preparation and Submission System modernized proposal preparation and submission capabilities by improving the user experience while also reducing administrative burden through an intuitive and user-friendly interface and expanded real-time automated proposal compliance checking. For example, there are more than 600 automated compliance checks in Research.gov across all proposal submission types as well as for supplemental funding requests versus 55 compliance checks that were in FastLane for full proposals only. This robust set of automated compliance checks includes specific and actionable warning and error messaging and is designed to help reduce administrative burden for both researchers and NSF Program Officers and minimize proposals being returned without review due to compliance issues. The Research.gov Proposal Submission System offers users various data input prompts such as wizards to walk users through preparation steps as well as inline help features such as tool tips, information messaging, and links to NSF policy guidance and job aids.
- In April 2023, NSF transitioned **NSF's new website**, formerly known as beta.nsf.gov, to NSF.gov. The new-look website homepage inherited the URL NSF.gov, while existing beta.nsf.gov pages are labeled new.nsf.gov. NSF updated navigation capabilities with a universal header and footer, and improved the "Funding" and "Awards" sections of the website making it easier for users to find high-priority information. We also released a new and improved "About NSF" section, revamped URLs for easier navigation and search results, and released improved Solicitation pages.
- NSF partnered with NASA to complete a successful pilot of **NASA's eBooks system** and determined this system, with enhancement, is a viable replacement for the legacy NSF Interactive Panel System. DIS has begun implementation of a new **Proposal Evaluation System (PES)** based on NASA eBooks. PES is used for the preparation and submission of panel reviews, to support panel meetings, and real-time collaboration on panel summaries. The Gamma version of PES was released in November 2023. Program Officers have been volunteering to use the new system to help further validate PES in preparation for the NSF-wide rollout planned for the third quarter of FY 2024. To date, 57 Gamma panels, with more than 385 panelists, are complete, and 42 more Gamma panels have been scheduled. The Interactive Panel System (IPS) module in FastLane will be turned off when PES is released for use NSF-wide.
- In support of NSF's strategic plan, DIS made several changes to Research.gov Account Management to help NSF understand more about people who interact with NSF. Research.gov Account Management establishes a **single unique identity (NSF ID)** that persists across all NSF business applications for each member of the external research community throughout their career. To further support NSF's centralized account registration and profile management process for the research community, DIS integrated panel reviewers and other federal advisory meeting participants into the Account Management System as well as Graduate Research Fellows. DIS also expanded the demographic information gender response options in user

profiles to include a new "unspecified, or another gender identity" selection for individuals with reviewer and Principal Investigator roles in Account Management and implemented an annual user profile review to prompt all NSF account holders to review their profile information and make updates as needed.

- DIS continued to provide enhanced data management, analytics platforms, and reporting capabilities to NSF and the public. New **Agency Priority Goal Dashboards** are now available internally and externally that provide metrics for the number and proportion of proposals received from underrepresented principal investigators and underserved institutions and track the progress of this goal. Additionally, **the Data Lakehouse is now available to all staff,** making real-time data accessible to data scientists and analysts. The Data Lakehouse provides the most complete and up-to-date information from various NSF applications for data science, machine learning, and business analytics projects without needing to access multiple systems.

- OMB Memo M-21-07, **Completing the Transition to Internet Protocol Version 6 (IPv6**), requires all federal agencies to be transitioned from Internet Protocol Version 4 (IPv4) to 80% IPv6-only infrastructure by the end of FY 2025 and prepare for retirement of remaining IPv4 systems. More than one-third of NSF's IT systems are now Ipv6 compliant, and DIS expects to exceed OMB's stated FY2025 target and be more than 85% compliant by the end of FY 2025.

Ensuring Small Business Participation in NSF Acquisitions

The Office of Small and Disadvantaged Business Utilization (OSDBU) helps ensure that NSF meets its annual prime and subcontracting goals set by the U.S. Small Business Administration.

- **New Deputy OSDBU Director: Ms. Anita Perkins joined NSF February 25, 2024**
  Anita joins NSF from the Department of Homeland Security, Immigration and Customs Enforcement (DHS/ICE) where she served as the Small Business Procurement Analyst and managed the small business program for ICE since 2016, leading to more than $40 billion in prime and subcontract awards to small businesses.

- **A+ Rating**
  The NSF received an A+ rating on the Small Business Procurement Scorecard the past two fiscal years, which is evidence of the collaboration between the NSF OSDBU and DACS to promote and maximize the use of small businesses in agency procurements.

- **Increased Small Business Goals**
  The NSF received its final goaling letter from the Small Business Administration in January, which increased NSF's FY 2024 prime contracting goal for small disadvantaged businesses to 22% (up from 12.6% in FY 23).

Update on NSF's Knowledge Management Movement

At the previous BOAC meeting in December 2022, Linda Blevins from the Office of Integrative Activities updated the Committee on the work she was beginning to implement a Knowledge Management (KM) program at NSF. Following are developments in KM at NSF since that time.

- **Staffing Update**: The NSF Knowledge Management Team now has three full-time federal positions, a senior leader (Linda Blevins), a Knowledge Management Advisor (Stacey O'Hara), and a position yet to be filled. The KM Team has one and a quarter contractors supporting the overall project. In response to BOAC's advice, one of the contractors serves as a Knowledge Journalist helping to document the repeatable process emerging from its work.

- **Technology Contract Update**: On September 22, 2023, NSF signed a technology integration contract with MetaPhase Consulting. The goal is to build an information architecture + semantic search that can be used generically for KM in the future while adding a front end that is specific to internal policies.

- **Internal NSF Policy Update**: The KM team worked with a group of 12 knowledge brokers from across the agency to develop a path forward for improved internal policy management. The KM team is working to build capacity in the agency in this important area.

- **Key Internal and External Partnerships and Outreach:** Over the last two years, the KM Team has been partnering with offices across NSF to provide knowledge support, helping NSF organize both work products and internal resources materials. NSF is also working broadly across the federal government. NSF, along with over 40 federal agencies, is an active participant in the Federal Knowledge Management Community (FKMC). The KM Team develops close partnerships with other agencies to share best practices.

- **Next Steps and Future Categories of Knowledge:** In an effort to reach beyond internal policies, the KM Team began an outreach campaign to provide agency vocabulary and strengthen NSF's knowledge-sharing culture. To that end, the KM Team held a popular Lunch and Learn in January 2024. More than 50 people attended, with attendees coming from six of the eight directorates and from OIRM, BFA, CIO, and other OD offices. Since the event, several internal organizations have reached out to the KM team for further consultation. The KM Team is expanding to future categories of knowledge as NSF begins to institutionalize the new approach to internal policy management.

NSF Budget Update

March 4, 2024
B&O Advisory Committee

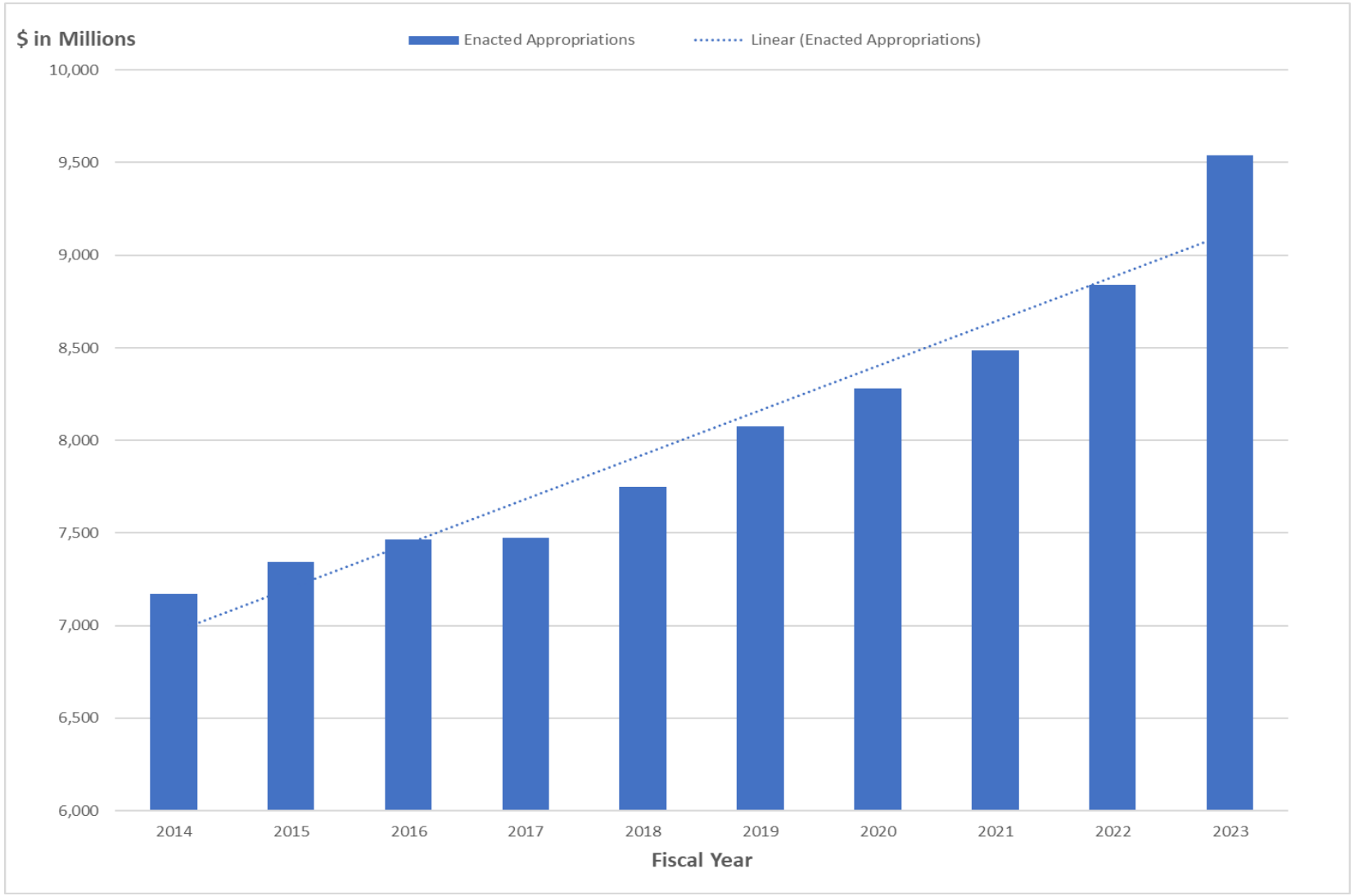
Caitlyn Fife, Division Director, BFA/Budget Division

TOPICS

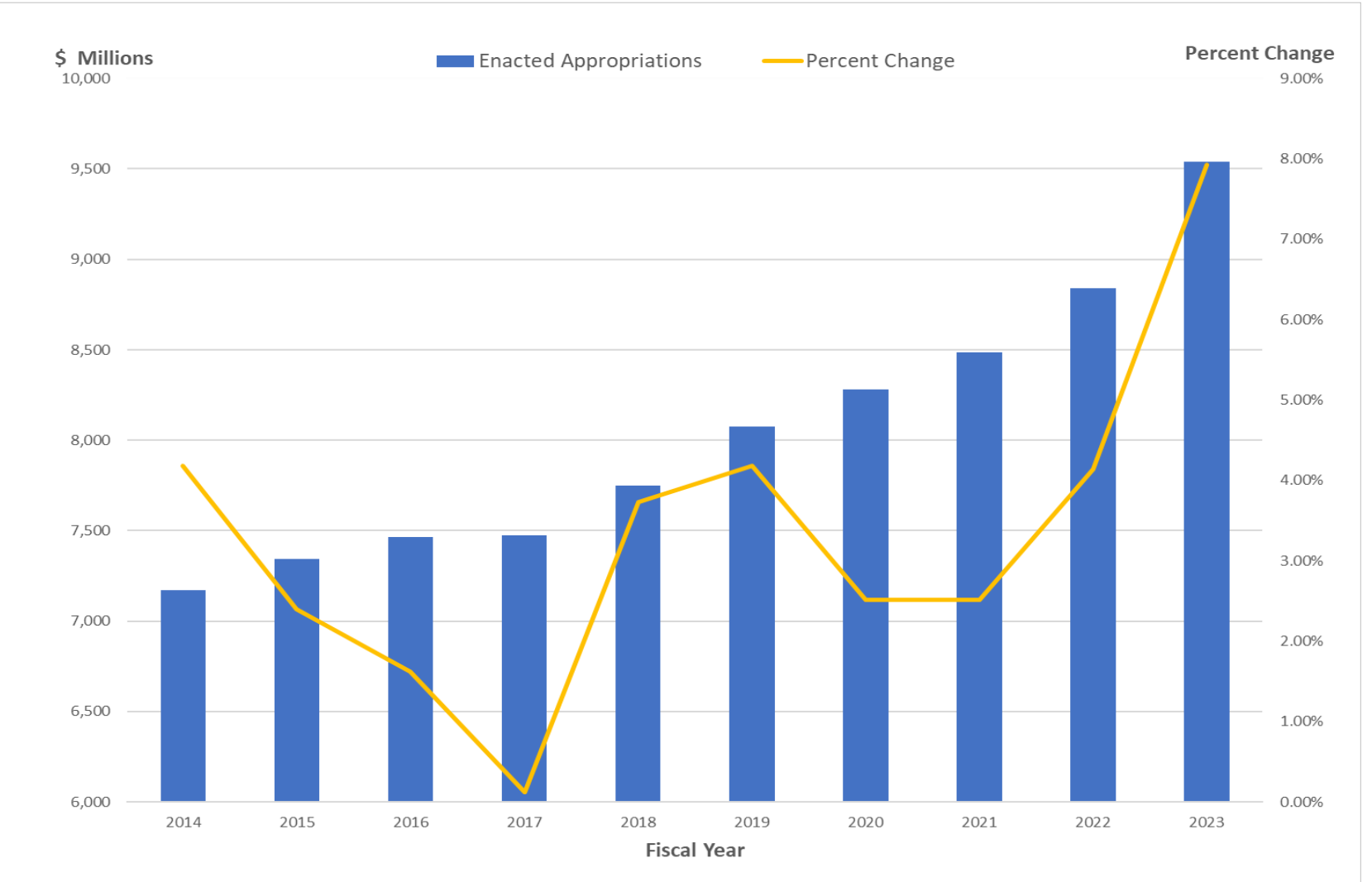
- Budget Context
  - NSF Budget Over the Years
  - NSF Enacted Funding levels FY 2014-2023
- Supplemental Appropriations/Authorizations
  - CHIPS and Science Act – Year 2
  - FY 2023 Disaster Relief Supplemental
- Current Year Update
  - FY 2024 Request
  - FY 2024 Administration Priorities
- FY 2025 Planning
  - Where are we in the process?
  - What's next?

Budget Context

NSF BUDGETS OVER THE YEARS



NSF ENACTED FUNDING LEVELS



Supplemental Appropriations/Authorizations

CHIPS AND SCIENCE ACT UPDATE

- Signed into law on August 9, 2022. NSF continues to implement.
- Authorized $81 billion over five years (FY 2023 – FY 2027).
- Appropriated $200 million over five years for microelectronics workforce education, or $25 million in FY 2023 and FY 2024, rising to $50 million in FY 2026 through FY 2027.
- Addresses topics such as research security and directs support for critical research and research-enabling infrastructure.
- Includes historic investments in science across multiple agencies, creating opportunities to strengthen partnerships in the federal R&D landscape.

DISASTER RELIEF SUPPLEMENTAL UPDATE

- Signed into law December 19, 2022. Available through September 2025.

- $700 million allocated agency wide to bolster base research and development programs.

- $335 million for CHIPS Implementation investments
  - $210 million to TIP in FY 2023 for NSF Engines and Entrepreneurial Fellows.
  - $125 million to EDU for a range STEM education programs.
  - Not part of NSF's "base" budget in the FY 2024 Request

Current Year Update

FY 2024 REQUEST

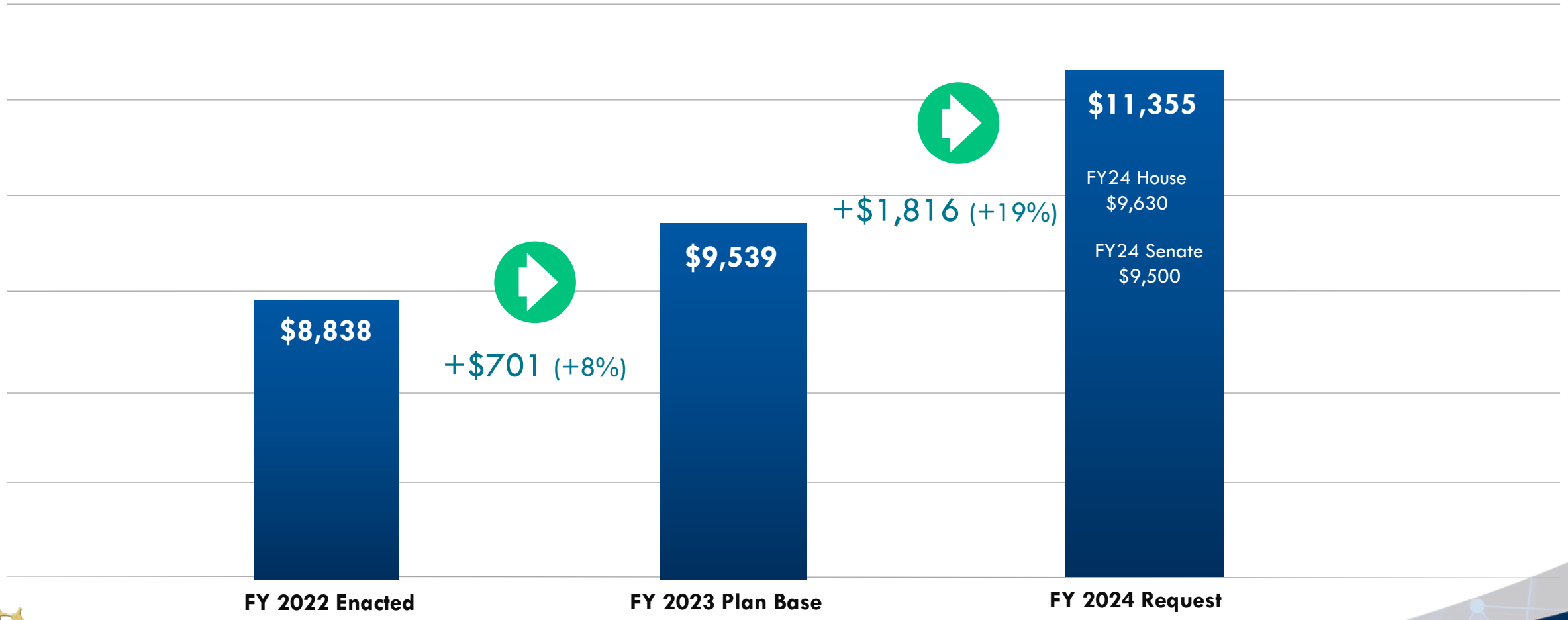
- NSF is operating under a continuing resolution through March 8, 2024.
- FY 2024 Budget Request is $11.355 billion, or -$1.816 billion (-19.0%) below FY 2023 Plan Base.
- The House mark is $9.6 billion or $91.0 million (+1%) above FY 2023 Current Plan Base.
- The Senate mark is $9.5 billion, or -$39.0 million (-0.4%) below FY 2023 Current Plan Base.

(Dollars in Millions)

	FY 2022 Enacted	FY 2023 Plan Base	FY 2024 Request	**FY 2024 House Mark**	**FY 2024 Senate Mark**
Research & Related Activities	$7,159	$7,614	$9,018	**$7,867**	**$7,608**
STEM Education	1,006	1,246	1,496	**1,006**	**1,228**
Major Res. Equip. & Fac. Construction	249	187	305	**254**	**187**
Agency Operations & Award Mgmt.	400	463	504	**472**	**448**
Office of Inspector General	19	23	27	**27**	**23**
National Science Board	5	5	5	**5**	**5**
Total	$8,838	$9,539	$11,355	**$9,630**	**$9,500**

Totals may not add due to rounding.

NSF Funding Levels FY 2022 – FY 2024



(Dollars in Millions)

ADMINISTRATION PRIORITIES

NSF will align investments with the Administration's agenda by continuing to focus on current investments:

- Prioritize climate-related activities
- Promote equity for underserved communities
- Support economic recovery and research security
- Continue emphasis on Emerging Industries: AI, Advanced Manufacturing, Advanced Wireless, Biotech, Microelectronics/Semiconductors, QIS
- Support the AI Executive Order 14110 issued on October 30, 2023

FY 2025 Planning

Budget Process – Where Are We?

Timeframe	NSF Leadership Activities
September 2023	Delivered FY 2025 OMB Budget to OMB
Sept – Nov 2023	Ongoing: Briefings and Discussions between NSF and OMB
November 2023	NSB Committee on Strategy Meeting
December 2023	NSB Meeting
December 2023	FY 2025 Passback, Appeal, and Settlement Received
February 2024	NSB Meeting
March 2024	B&O AC Meeting FY 2024 Appropriation Enacted? FY 2025 Congressional Justification Submitted on 3/11 Initial FY 2026 Planning

We are here

WHAT'S NEXT?

Passback and Settlement for FY 2025 received and completed in December/January.

NSF's FY 2025 Congressional Request release date is March 11, 2024.

Congressional discussions in Spring and Summer 2024. Budget hearing details are pending.

Questions?

OLPA Update

Robert Moller
Deputy Office Head
Office of Legislative and Public Affairs

March 4, 2024

Announcements

January 24, 2024

NSF launched the **National Artificial Intelligence Research Resource (NAIRR) pilot**, a first step towards the vision for a shared research infrastructure that will strengthen and democratize access to critical resources necessary to power responsible AI discovery.

380 media mentions.

January 29, 2024

NSF announced the first-ever **NSF Regional Innovation Engines (NSF Engines) awards** to **10 teams** spanning universities, nonprofits, businesses, and other organizations across the United States.

618 media mentions.

Legislative Activity

DECEMBER 2023

- The **Director participated in a STEM education and workforce roundtable** with **Rep. Rob Wittman (R-VA)** in Richmond, Virginia.
- The **Director met with Rep. Tony Gonzales (R-TX)** on Capitol Hill.

Rep. Rob Wittman (R VA) and NSF Director Dr. Sethuraman Panchanathan

JANUARY 2024

- House Committee on Science, Space, and Technology Subcommittee on Research and Technology held a hearing on the reauthorization of the National Windstorm Impact Reduction and National Earthquake Hazards Reduction programs. **ENG Assistant Director Susan Margulies testified on behalf of NSF.**

Image credit: U.S. House of Representatives Committee on Science, Space, and Technology Democrats

Legislative Activity

FEBRUARY 2024

- Joint Research & Technology and Energy Subcommittee Hearing: Federal Science Agencies and the Promise of AI (Artificial Intelligence) in Driving Scientific Discoveries. **Testimony from Ms. Tess DeBlanc-Knowles, Special Assistant to the Director for Artificial Intelligence, U.S. National Science Foundation**.

Image credit: Committee on Science, Space, and Technology

FEBRUARY 2024

- On Feb. 15, the House Committee on Science, Space, and Technology held a hearing to examine federal science agency actions to secure the U.S. Science and Technology Enterprise. **Chief of Research Security Strategy and Policy Rebecca Keiser testified on behalf of NSF.**

NSF Growth to the Public

2022 VS 2023 MEDIA MENTIONS

SPECIFIC MENTIONS OF DR. PANCHANATHAN

NSF IN MAINSTREAM MEDIA OVERALL

SPECIFIC MENTIONS IN NEW YORK TIMES

SOCIAL MEDIA GROWTH

	2022	2023	% Change
LinkedIn Followers:	189,245	230,387	+22%
Director's X Followers:	733	2,109	+188%

VIDEO GROWTH

Discovery Files Podcast

	2022	2023	% Change
Episodes produced:	25	53	+112%
Views:	2,970	495,778	+16,592%

YouTube Channel

	2022	2023	% Change
Subscribers:	127,396	140,140	+11%
Video shorts Produced: (aka TikTok-like product)	165	415	+151%
Video short views:	447,167	1,295,937	+190%

Messaging and Outreach

SOCIAL MEDIA POLICY

NSF employees are encouraged to use social media tools to enhance communication, collaboration, and information sharing in support of NSF's mission.

MEDIA POLICY

The media policy sets forth policy governing the release of information provided to the news media, including interviews, press releases, media advisories, media briefings and news stories.

Brand Management

NSF Policy on Brand Standards became effective on December 1, 2023

- The NSF Brand Standards Manual details the implementation.
- Official communications must include the NSF logo and other brand identity elements.
- Signage, webpages, and other high-profile materials are to be updated by December 31, 2024.
- Award terms and conditions are being updated to incorporate the new policy.

We are all NSF ambassadors!

Visit the ***NSF Brand Identity Portal*** in the NSF Media Hub.

Inquiries: *nsfbranding@nsf.gov*

Celebrating 75 Years of NSF Innovation

- May 10, 2025, marks NSF's 75th anniversary.
- Celebrating our history and building on NSF's Legacy.
- The 2025 campaign will include facility open houses, museum outreach, symposium, video game competition, and more.

NSF

Backgrounder: Spring 2024
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Moving NSF's Culture Forward

Presentation:

Culture is the underpinning to sustainable DEIA. Creating an environment in which all NSF staff can thrive starts with organizational culture and the ability to link DEIA efforts culture. DEIA is the outcome, not the process. This outcome-based thinking not only helps to advance DEIA objectives but also enhance organizational effectiveness. We have an opportunity before us to shape NSF's organizational culture; a culture that not only fosters a sense of trust and psychological safety, but also a culture that furthers NSF mission, increases organizational performance, and leads to greater innovation.

We have a number of high leverage, reinforcing initiatives to move our culture forward, including the Denison Model of Organizational Culture, the Under-representation and Barrier Analysis Tool, the DEIA Maturity Model, the Leader Reflection Tool, the Sexual Orientation and Gender Identity Data Action Plan, the Creating SPACE Program, and our Employee Resource Groups.

We are in the process of rolling out the agency-wide and directorate/office level Denison Organizational Culture Survey results. These results point to culture and organizational effectiveness areas that will strengthen NSF's culture and, in turn, ensure DEIA is sustainable.

Committee Action/Feedback

The CDIO Team pitched an overview of the DEIA program to the National Science Board on February 21, 2024, and it was extremely well received. We look forward to presenting the same overview to the BOAC for feedback and discussion.

Contact Person(s):

- Dr. Chuck Barber, (703) 292-7133, chbarber@nsf.gov
- Dr. Christine Wood, cwood@nsf.gov

NSF DEIA Program Overview and Discussion

Charles Barber, Chief Diversity and Inclusion Officer

BOAC
March 4, 2024

NSF DEIA PROGRAM

OVERVIEW & DISCUSSION FRAMEWORK

OUR APPROACH

- PRESERVING GOOD WORK
- VISION
- CREATING FUTUREPROOF MODELS
- HELPING OTHERS NAVIGATE

SUSTAINMENT STRATEGY

A... B... C

CULTURE INTELLIGENCE & PERFORMANCE

ORGANIZING DEIA

- POLICY
- TALENT MANAGEMENT
- OPERATIONS
- CULTURE

FUNCTIONAL CAPACITY

NEXT LEVEL DEIA

NSF DEIA MODELS:

- MATURITY MODEL
- UNDER-REPRESENTATION MODEL

DYNAMIC BENCHMARKS!

DATA DRIVEN APPROACH

EQUITY LENS

- GROUPS
- ON EVERY LEVEL
- STATISTICAL STANDARDS

ASSESS

UNDER-REPRESENTATION

IMPROVING CULTURE FORWARD

SYSTEMS POLICIES

SOGI INITIATIVES:

- SOGI DATA
- SGM DATA

LET'S MAKE OUR DATA ACTIONABLE

INCREASE

BARRIER ANALYSIS

NSF UNDER-REPRESENTATION

FOCUS ON:

ASSESSING UNDERREPRESENTATION WITHIN TALENT MANAGEMENT SYSTEMS

BALANCING
WITHOUT COMPROMISING

DIVERSITY

MERITOCRACY

DYNAMIC BENCHMARKS

PREDICTIVE ANALYTIC

&

BARRIER ANALYSIS TOOL

DATA MAPPING

ARCHITECTURE & STRUCTURE

DATA INTEGRATION

DATA SOURCES

DATA ANALYTICS

NEXT LEVEL BARRIER ANALYSIS

MD-715 REPORT

DATA INTEGRATION

MAKING IT ACTIONABLE

LINK

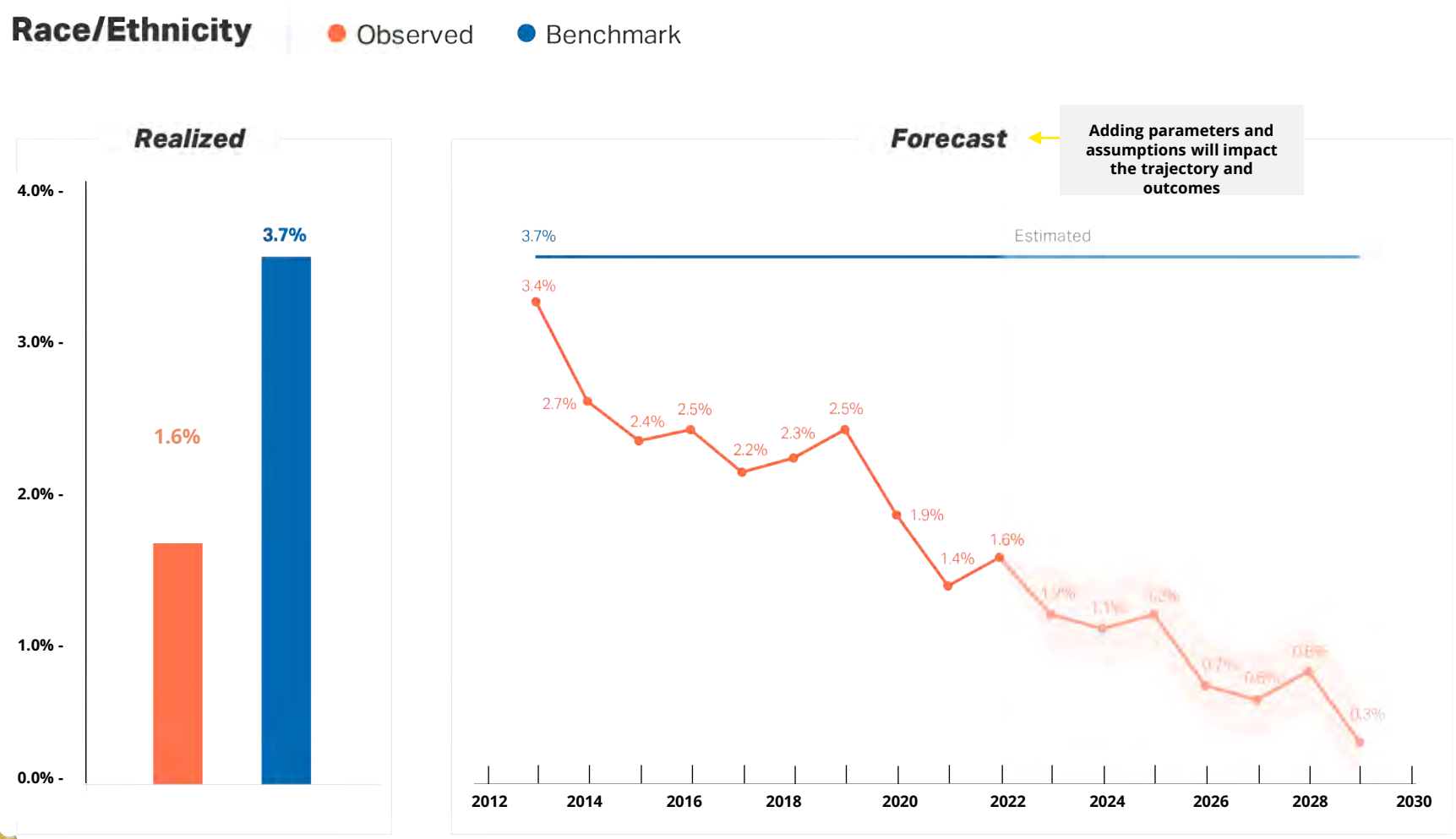
TAKE A LOOK AT:

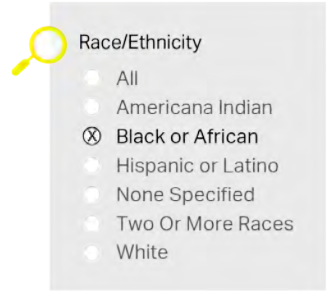
- GLOBAL TRENDS
- WORK CHARACTERISTICS
- MANAGEMENT CHALLENGES

PROOF OF CONCEPT
FOR DATA VISUAL

TAKING ACTION!

Under-representation Framework





Note: Data used to derive benchmarks will incorporate employment profiles and diversity characteristics for each occupational specialty. This ensures that leaders can compare the estimated relevant labor force data with the weighted crosswalk to calculate benchmarks and representation for gender, race, and ethnicity.

Based on available data, under-representation occurs in the female, Hispanic, black and instances where individuals identify with two or more races.

NSF DEIA MATURITY MODEL

FOCUS ON:

THE ORGANIZATIONAL SHIFT

OUR MODELS ARE

ASPIRATIONAL:

FROM COMPLIANCE TO INCLUSIVE

- INCLUSIVE
- COHESIVE
- ACCEPTANCE
- EVOLVING
- COMPLIANCE

DIVERSE:

- BACKGROUN
- CAPABILITI
- PERSPECTIV

LINES OF EFFORT:

CULTURE

LEADERSHIP DEVELOPMENT

OPERATIONS

POLICY STATEMENTS

POLICY

DEI MENTORING PROGRAMS

TALENT MANAGEMENT

DIVERSITY RECRUITMENT, NEW EMPLOYEE SOCIALIZATION, ETC.

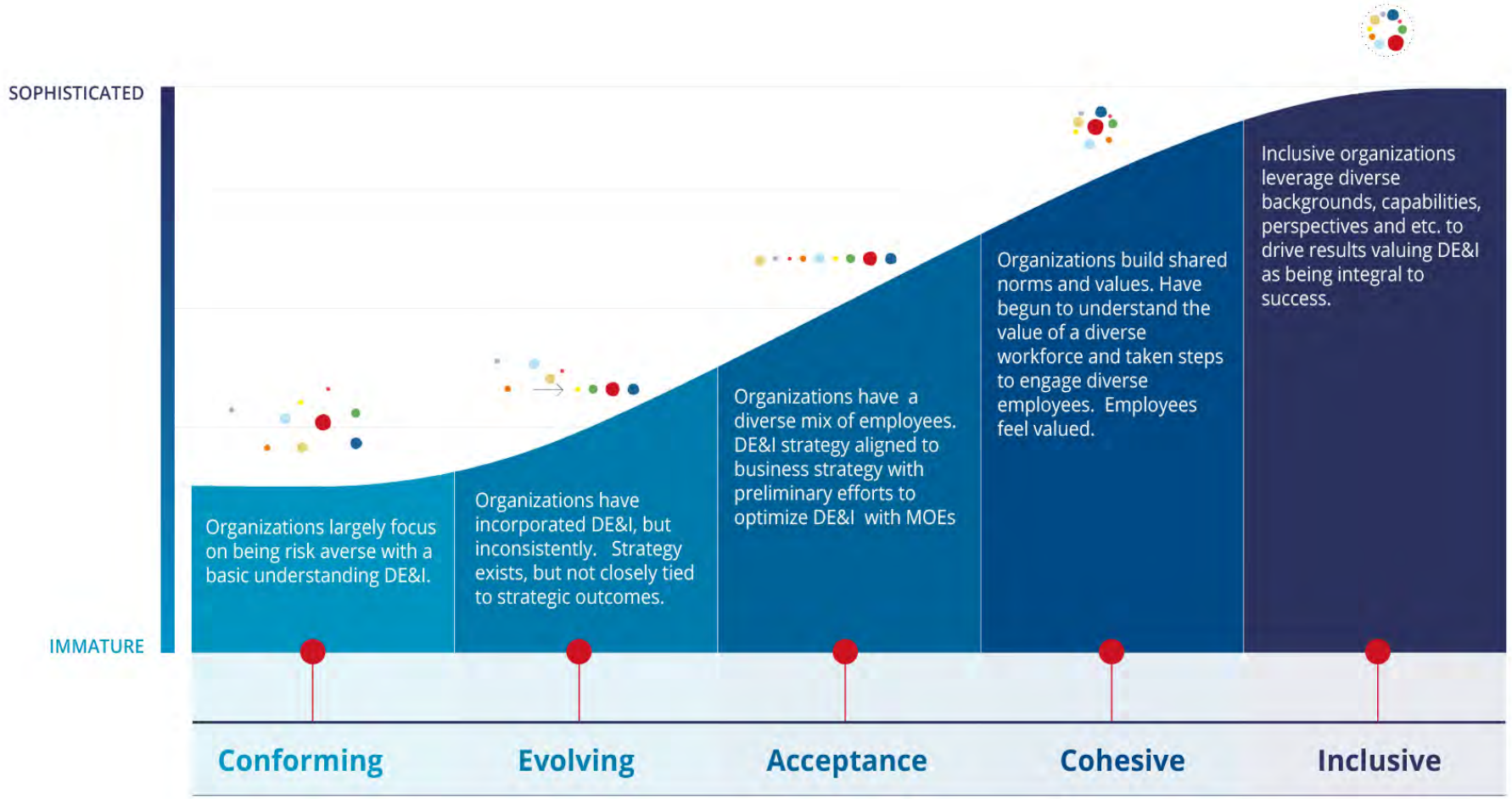
LEADERSHIP REFLECTION/ RESTORATIVE PRACTICE

SOGI INITIATIVES:

- SOGI DATA
- SGM DATA

- ✓ SELF ASSESMENT
- ✓ SELF REFLECTION
- ✓ GOAL SETTING

NSF DEIA Maturity Model



NSF Culture Assessment and Linkage of DEIA Efforts to Culture

ADAPTABILITY
Pattern, Trends, & Market

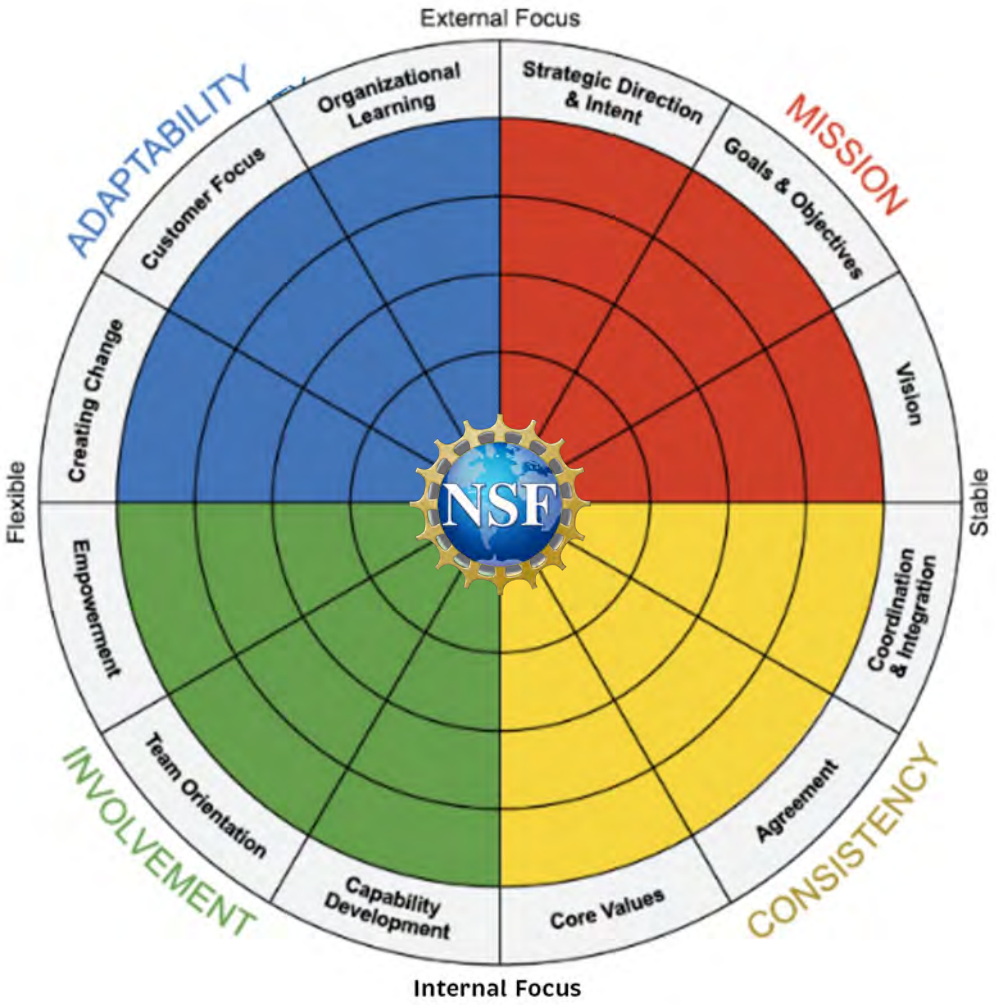
Are we listening to the environment?

Translate the demands of the environment into action

INVOLVEMENT
Commitment, Ownership, & Responsibility

Are our people aligned and engaged?

Build human capability, ownership, and responsibility



MISSION
Direction, Purpose, & Blueprint

Do we know where we are going?

Define a meaningful long-term direction

CONSISTENCY
Systems, Structures, & Processes

Does our system create leverage?

Define the values & systems, the basis of a strong culture

Informal STEM CDIO Forum

Backgrounder: Spring 2024
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Unsolved Problem

Presentation:

In April 2023, OMB issued a memo to agency heads, "Measuring, Monitoring, and Improving Organizational Health and Organizational Performance in the Context of Evolving Agency Work Environments," (M-23-15). This memo outlined an expectation for federal agencies to substantially increase meaningful, in-person work, as well as to develop mechanisms to assess and monitor organizational health and performance on a routine basis. Specifically, M-23-15 required agencies to 1) develop a Work Environment Plan, 2) establish routines to assess and implement workplace policy changes on an ongoing basis, and 3) identify organizational health and performance metrics to measure, monitor, and improve organizational health and organizational performance and serve as the evidence base for these decisions.

Over the spring and summer of 2023, NSF developed its Work Environment Plan and established new telework and space policies for the agency. These policies required increased in-person work for most staff beginning in October 2023, and established updated parameters for staff maintaining dedicated work spaces and use of hoteling spaces.

NSF began implementation of organizational health and performance measures and routines in fall of 2023, and is currently working to expand upon these measures to facilitate agency decision-making. NSF reports to executive leadership quarterly on metrics in the following domains: 1) Human Capital, 2) Financial Management, 3) Information Technology, 4) Facilities Use, and 5) Organizational Performance.

Committee Action/Feedback:

NSF is still within its first year of reporting on organizational health and performance metrics under M-23-15, and the reporting period has coincided with implementation of new policies that will likely affect many of these metrics. As we work to mature our processes around assessing organizational health and performance and how those data may inform future management decisions, BFA and OIRM seek BOAC advice on the following questions:

1. Which performance indicators should NSF leadership consider when evaluating its organizational health and performance?
2. What information would these indicators provide?
3. What strategies should NSF leadership employ to enhance its organizational health – resilience, capacity, and capability?

Contact Person(s): **Jason Bossie, (703) 292-7460 jbossie@nsf.gov**
Peggy Gartner, (703) 292-7535 pgartner@nsf.gov

Measuring and Assessing Organizational Health and Performance

Business and Operations Advisory Committee Meeting

March 4, 2024

Presenters:

Jason Bossie, Deputy Office Head, BFA

Peggy Gartner, Deputy Office Head, OIRM

Work Environment and Organizational Health Team:

- *Teresa Guillot, DIS*
- *Victor Powers, DAS*
- *Lillian Thomas, HRM*
- *Heather Tompkins, BFA*
- *Theresa Beatty, BFA*

Agenda

- **OMB requirements and concepts**
- **NSF implementation of requirements**
- **Discussion on ways NSF can further measure and assess its organizational health and performance**

BOAC Discussant: Dr. Joseph Mitchell, NAPA

OMB Guidance on Org Health and Performance

M-23-15: Measuring, Monitoring, and Improving Organizational Health and Organizational Performance in the Context of Evolving Work Environments

01

Update Work Environment Plans.

02

Establish routines to assess and implement workplace policy changes.

03

Identify indicators to measure, monitor, and improve organizational health and performance.

OMB Memo: https://www.whitehouse.gov/wp-content/uploads/2023/04/M-23-15.pdf

Defining Concepts

- Organizational Health is an organization's ability to drive performance results collectively in support of its mission, deliver programs and services, and meet stakeholder needs and priorities on an ongoing basis. An organization's health may include considerations such as resilience, capability, and capacity.

- Organizational Performance is an organization's effectiveness in delivering mission aligned results. Effectiveness and results can be measured by a range of indicators and evidence, both internal and external to the organization.

- Work Environment is the combination of personnel policies; talent and workforce performance management strategies; workforce capacity, workloads, and work schedules; design of workspaces and workplaces; supportive and assistive technology tools for individual and collaborative work; and integration of diversity, equity, inclusion, and accessibility principles across management practices and processes. Among other factors (e.g., resource allocation, workforce availability, and policy or statutory constraints), work environments can impact organizational health and, in turn, organizational performance.

NSF Implementation of OMB Requirements

Month	Action
April 2023	• NSF establishes Work Environment Team
June 2023	• Submit updated Work Environment Plan to OMB.
July 2023	• Announce new telework and space policies. • Present Organizational Health and Performance update to OMB. • Selected preliminary organizational health and performance indicators; propose routines for monitoring.
October 2023	• New space and telework policies in effect.
November 2023	• First quarterly briefing of Org Health and Performance for NSF Leadership Team
January 2024	• Deploy dashboard of indicators

Organizational Health and Performance Indicators

Major Domain Areas:

- Human Capital
- Information Technology
- Facilities/Space Use
- Financial Management
- Organizational Performance

Human Capital – Employee Engagement

Employee Engagement Index: The index is comprised of three subfactors: Leadership, Supervisors, and Intrinsic Work Experience

- Source: Federal Employee Viewpoint Survey (FEVS)
- Frequency: Annual

Global Satisfaction Indices: Employee satisfaction with job, pay, and organization; willingness to recommend the organization as a good place to work.

- Source: FEVS
- Frequency: Annual

Response to Statements**, "I feel connected to the NSF mission."** and, **"I feel a sense of accomplishment from my work."**

- Source: NSF Pulse Survey
- Frequency: Semi-annual

Human Capital: Intent to Leave/Attrition

Intent to Leave: Response to Question: Are you considering leaving NSF within the next year, and if so, why? (e.g., workplace flexibilities, pay, co-workers, etc)

- Source: NSF Pulse Survey
- Frequency: Semi-Annual

Attrition Rates: Separations due to retirement vs. all other separations. Compares internal separations (assumed a new position within NSF) and external separations.

- Source: Workforce Database
- Frequency: Available year-to-date. Reported quarterly.

Human Capital: Customer Satisfaction and Time to Hire

Customer Satisfaction: Response to statement, "I am satisfied with the quality of support and solutions I received over the last 12 months from the Human Capital function."

- Source: GSA Customer Satisfaction Survey
- Frequency: Annual

Time to Hire: Average Number of Days to Hire

- Source: Workforce Transformation and Tracking System (WTTS) and Federal Personnel/Payroll System (FPPS)
- Frequency: Quarterly

Facilities/Space Use

Employees Onsite: Average Weekday Number of Federal Employees that Entered Agency HQ Building(s) During the Pay Period

- Source: NSF Badge Swipe Data
- Frequency: Availably by pay period; reported quarterly

Average Number of In-Person Days for Federal Employees Assigned to HQ Building(s) During the Pay Period

- Source: NSF Badge Swipe Data
- Frequency: Availably by pay period; reported quarterly

Information Technology

Customer Satisfaction: Response to statement, *"I am satisfied with the quality of support and solutions I received over the last 12 months from the Information Technology function."*

- Source: GSA Customer Satisfaction Survey
- Frequency: Annual

Customer Satisfaction following IT interaction: Response to question, *"How would you grade your overall experience requesting service?"*

- Source: NSF internal surveys
- Frequency: Reported quarterly

IT System Uptime: Percentage of time NSF mission critical IT systems are available, excluding planned downtime.

- Source: Division of Information Systems (DIS)
- Frequency: Reported quarterly

Financial Management

Customer Satisfaction: Contracting. Response to statement, "I am satisfied with the quality of support and solutions I received over the last 12 months from the Contracting function."

- Source: GSA Customer Satisfaction Survey
- Frequency: Annual

Customer Satisfaction: Financial Management. Response to statement, "I am satisfied with the quality of support and solutions I received over the last 12 months from the Financial Management function."

- Source: GSA Customer Satisfaction Survey
- Frequency: Annual

Status of Funds: Funding committed and obligated against NSF's fiscal year operating plan.

- Source: NSF financial data
- Frequency: Available year-to-date; reported quarterly

Audit Results: Number of material weaknesses in NSF's annual financial audit.

- Source: NSF Agency Financial Report
- Frequency: Annual

Organizational Performance

Number of competitive proposal actions (declines, recommend for award).

- Source: NSF by the Numbers
- Frequency: Quarterly

Number of competitive award actions

- Source: NSF by the Numbers
- Frequency: Quarterly

Number of active awards

- Source: Internal NSF data (Report Server query)
- Frequency: Quarterly

Discussion Questions

1. Are there other performance indicators that NSF leadership should consider when evaluating its organizational health and performance?

2. What information would these indicators provide that is not currently available?

3. What strategies should NSF leadership employ to enhance its organizational health – resilience, capacity, and capability?

Backgrounder: Spring 2024
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: CIO Introduction- Vision/Key Priorities

Presentation:

During this session, NSF's new Chief Information Officer (CIO), Terry Carpenter, will introduce himself to the Committee. He will provide an update on the status of the NSF Office of the CIO (OCIO), give an overview of his vision and key priorities for the new Office, and share some of the opportunities and challenges he sees on the horizon for NSF with respect to information technology and data. Terry will give the Committee an opportunity to ask questions about his vision for NSF's information technology and to share their ideas and strategies for helping NSF best navigate organizational and technology changes.

Committee Action/Feedback:

Charge/Questions to the Committee:

1. How can the OCIO best bring expertise to, and facilitate conversations with, BOAC and the Subcommittee on Information Technology and Enterprise Architecture Strategy to support the BOAC's charge to NSF?

2. What strategies and approaches from your institutions can you share that would help guide NSF through this period of organizational and technological changes?

3. How does the BOAC envision the focus/role of the Subcommittee may evolve with the formation and evolution of the OCIO?

Contact Person(s)-
Terry Carpenter (NSF CIO) tcarpent@nsf.gov 703-292-7990
Nancy Kaplan (DIS Chief Advisor) nkaplan@nsf.gov 703-292-4209

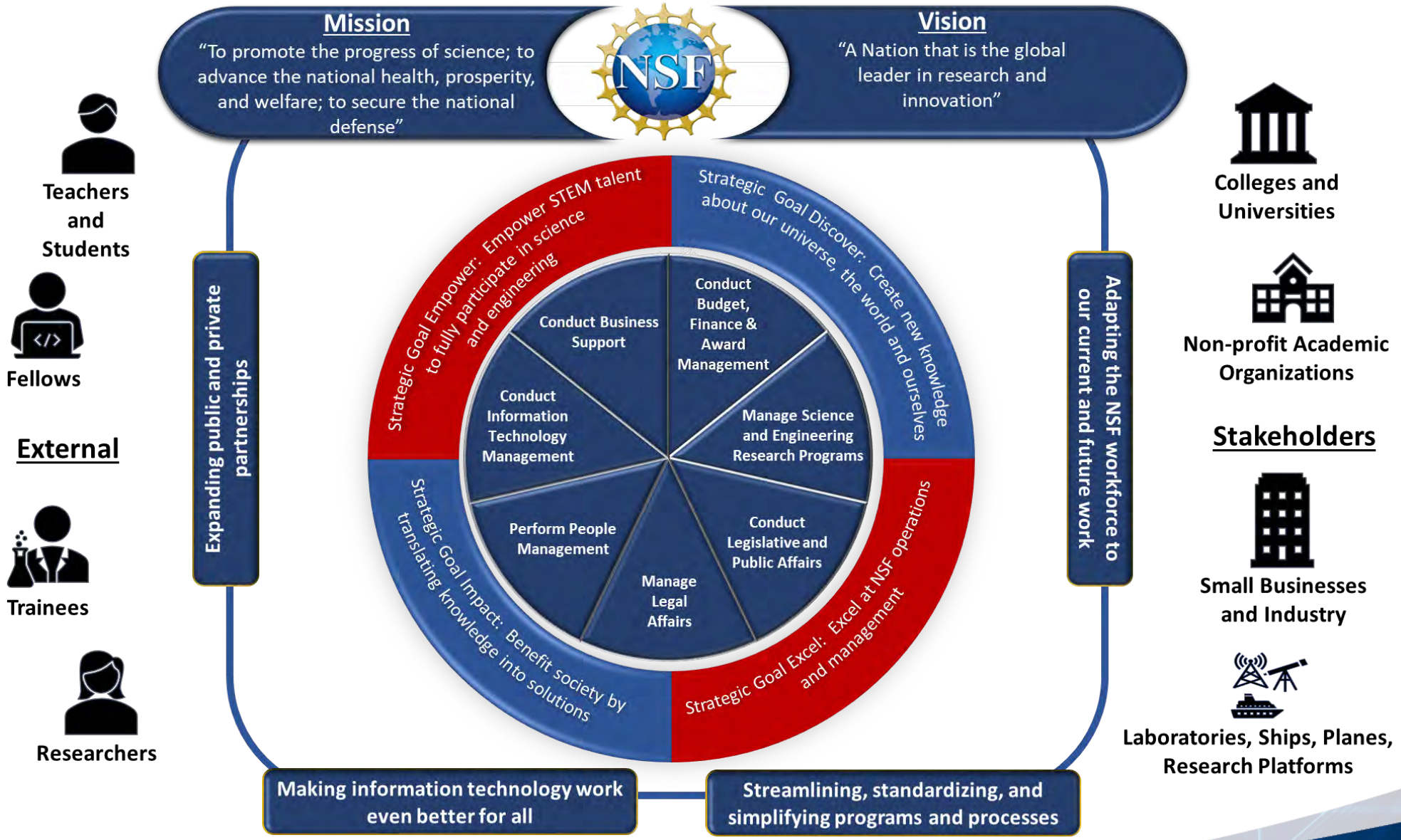
New OCIO Vision and Future Direction

Business Operations Advisory Council (BOAC) Meeting

Terry Carpenter

March 04, 2024

NSF Operational Concept



BOAC IT EA Subcommittee Recommendations FY25

Recommendation	Response
1. IT Supporting a modern workforce: Promoting continuous workforce improvement through integrated management systems; best-in-class industry and community solutions; Implementing Common ID platforms.	In NSF's FY2022-2026 Human Capital Operating Plan, NSF seeks to streamline processes to optimize service delivery and promote evidence-based decision making through using existing and new tools.
2. Enabling external stakeholders: Building or acquiring tools to facilitate developing and operationalizing partnerships between NSF customers and making it easier for new kinds of partnerships between NSF and customers/groups; Fostering partnerships across industry.	NSF expanded its MS Teams Interagency Collaboration Program to include 16 agencies. NSF and the DOE piloted a shared communications channel in Teams in 2021, now expanded to DOJ and DOL.
3. Organizational prioritization and complexity: Maintaining a clear understanding of key resources; Building and maintaining a central dashboard for key metrics; Aligning the organization to sustain a highly resilient operating environment yet flexible enough to pivot quickly;	NSF is in the process of forming a new CIO/CTO Office, which will bring all IT planning and execution under one office and CIO so the Agency can position itself with the right structure and resources for maximum efficiency/efficacy.
4. Investing in Data and Artificial Intelligence: Developing an AI inventory to ensure sure there are synergies between the responsible officials for AI and the CDO; AI and Data Driven Upskilling and Training of the IT Labor Force	IMG established R&D Innovation Labs to enable rapid prototyping and experimentation. Actively maturing governance and policy around data and AI, to focus on structuring responsible use of AI and data at NSF.
5. IT Excellence: Building tools for internal NSF customers and making it easier for new kinds of partnership between NSF and customers/groups; Cyber and Compliance/ Zero Trust Architecture (ZTA)	NSF will be expanding Power Platform for the enterprise in early FY24 to include licenses for the whole Agency. the Agency drafted the "National Science Foundation ZTA Strategy Implementation Plan" in March 2022.

New Operating Model – "Value Creation"[1]

- Strategy (prioritization)
- Data (insight)
- Agility (speed)
- Customer (experience)
- Automation (efficiency)
- Business of IT (works as intended)

Tech is more than automating business operations

- **Co-creation** of agency solutions
- **Platform economy** disruption
- Increasing **customer demands**

*Focus on **consumer digital** and **enterprise digital** – not digital & IT*

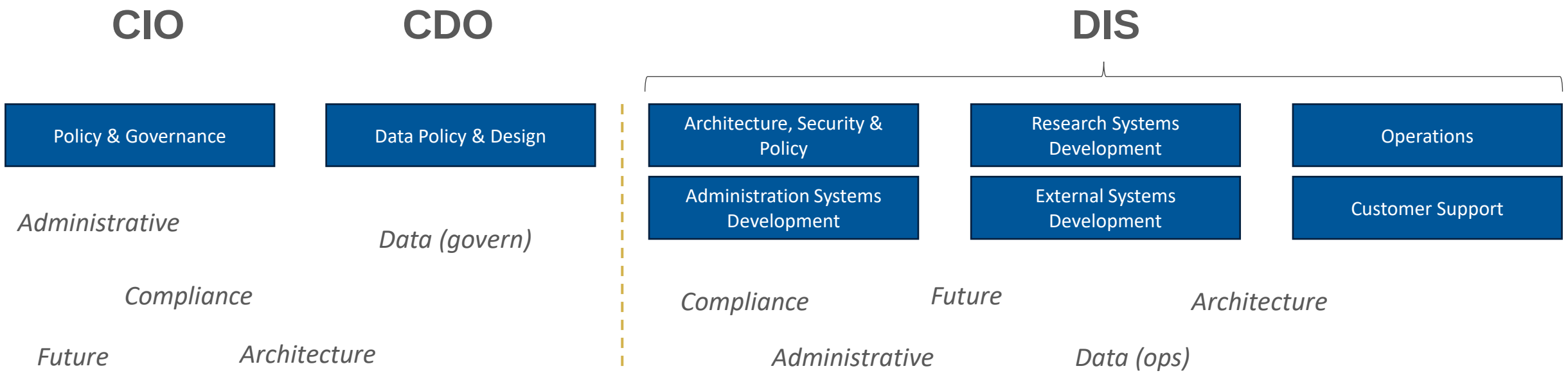
***CIO** is a **partner in the strategy** – not idea execution*

Footnote 1. "*Reimagining the Technology Operating Model,*" Deloitte Insights 2020

Competencies for today's CIO function

1. Find balance between business ambitions and tech abilities
2. Mindset to build and empower a team to be change management agents
3. Importance of security issues and integrate cybersecurity thinking into all
4. Sense of curiosity to learn and experiment with new things
5. Capacity to build and execute on a transformational digital roadmap

How it was – a Functional View



Plan, Manage, Design

Plan, Manage, Build, Secure & Operate

How it looks now (in process) – a Functional View

Office of the CIO & CTO

Administrative

- Staff Coordination
- Executive Assistance
- Financial Management
- Contract Management
- Workforce Management
- IT Communications

Digital Innovation & Governance

- IT Strategy
- IT Governance
- IT Policy (internal)
- IT Compliance (external)
- Enterprise Architecture
- Portfolio Management
- User Experience
- Innovation Leadership

Data & AI

- Enterprise Data Mgmt
- Responsible AI
- Data Services
- Machine Learning Ops (shared service)

Development

- Ent. Consumer Services
- Ent. Internal Mission Svc
- Ent. Admin Services

Security & Operations

- Information Assurance
- Risk Management
- Cybersecurity Ops
- Infrastructure Services
- Network Ops
- Customer Support Svs
- Consolidated Service Desk

Plan & Manage **Build, Secure & Operate**

Clear lines of responsibility

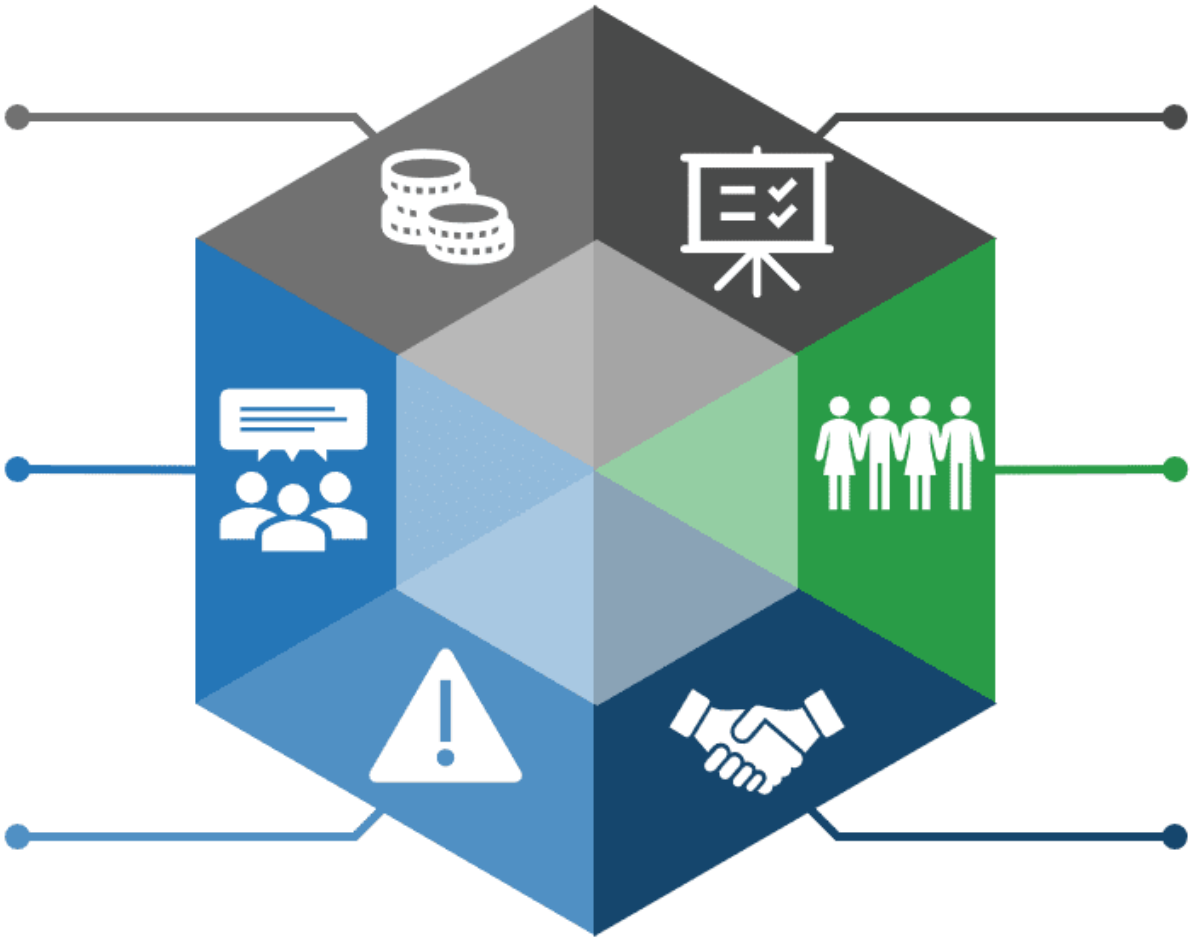
Office of the CIO Fundamentals

MANAGING TO A BUDGET

Reducing operational costs and increasing strategic IT spend.

DELIVERING ON BUSINESS OBJECTVES

Aligning IT initiatives to the vision of the organization.



CUSTOMER SATISFACTION

Directly and indirectly impacting customer experience.

EMPLOYEE ENGAGEMENT

Creating an IT workforce of engaged and purpose-driven people.

RISK MANAGEMENT

Actively knowing and mitigating threats to the organization.

BUSINESS LEADERSHIP RELATONS

Establishing a network of influential business leaders.

Source: Info-Tech Research Group https://wire19.com/metrics-for-cios-to-improve-performance

CIO Core IT Functions

Business of IT

- Strategic Planning
- Workforce Strategy
- Talent Development
- Budget Management
- Contract Management
- IT Business Agility

Engagement

- Communications Strategy
- Agency Customer Engagement
- Federal Partners
- Industry Partners
- Media Partners

IT Governance

- Agency Decision Framework
- Strategic Alignment
- Decision Execution
- Risk Management

Engineering & Innovation

- Enterprise Architecture
- Technology Roadmap
- Ideation Management
- Research & Development
- Agency Change Contribution

Operations

- Platform Operations
- Custom Software Services
- Data & AI Services
- Infrastructure Services
- Customer Service

Security

- Information Assurance
- Cyber Operations
- End Point (user) Security
- Research Security Partnership

NSF Mission Capabilities

Mission Capabilities	Definitions
Execute the National Science Foundation Mission	This includes all capabilities required to execute the NSF mission as listed below.
Manage Science and Engineering Research Programs	This capability includes all activities related to leading and coordinating strategic programs and opportunities related to the fundamental research and discovery in the subjects of: Biological Sciences (BIO), Computer & Information Science & Engineering (CISE), STEM Education (EDU), Technology, Innovation and Partnerships (TIP), Engineering (ENG), Geosciences (GEO), Mathematical & Physical Sciences (MPS), Social, Behavioral & Economic Sciences (SBE).
Conduct Budget, Finance & Award Management	This capability includes all activities involved with providing business, financial, and analytical services to stakeholders and customers.
Conduct Legislative and Public Affairs	This capability includes performing activities related to Congressional affairs, external affairs, public affairs and media, multimedia, visual information, web, history program, strategic communications.
Manage Legal Affairs	This capability includes all activities related to providing legal advice and assistance across a wide variety of areas, such as: grants, contracts and cooperative agreements; intellectual property; conflicts-of-interest; employee and labor relations; etc…
Perform People Management	This capability includes all activities related to strategic human capital planning and managing the workforce.
Conduct Business Support	This capability includes activities related to day-to-day business operations of the Agency to include supply management, library services, property management, visitor information communication, outreach and communications, graphic design, printing and media, etc…
Conduct Information Technology Management	This capability includes all activities related to managing all IT and data activities across NSF to include IT services, digital innovation and governance, data and artificial intelligence services, and all hardware, software and support systems and services.

Key IT Strategic Opportunities

Digital Experience

Build information-centric systems and tools; utilizing shared platforms to improve information dissemination; and delivering customer-centric, highly effective services to enable more efficient and coordinated delivery of digital information across NSF.

Artificial Intelligence

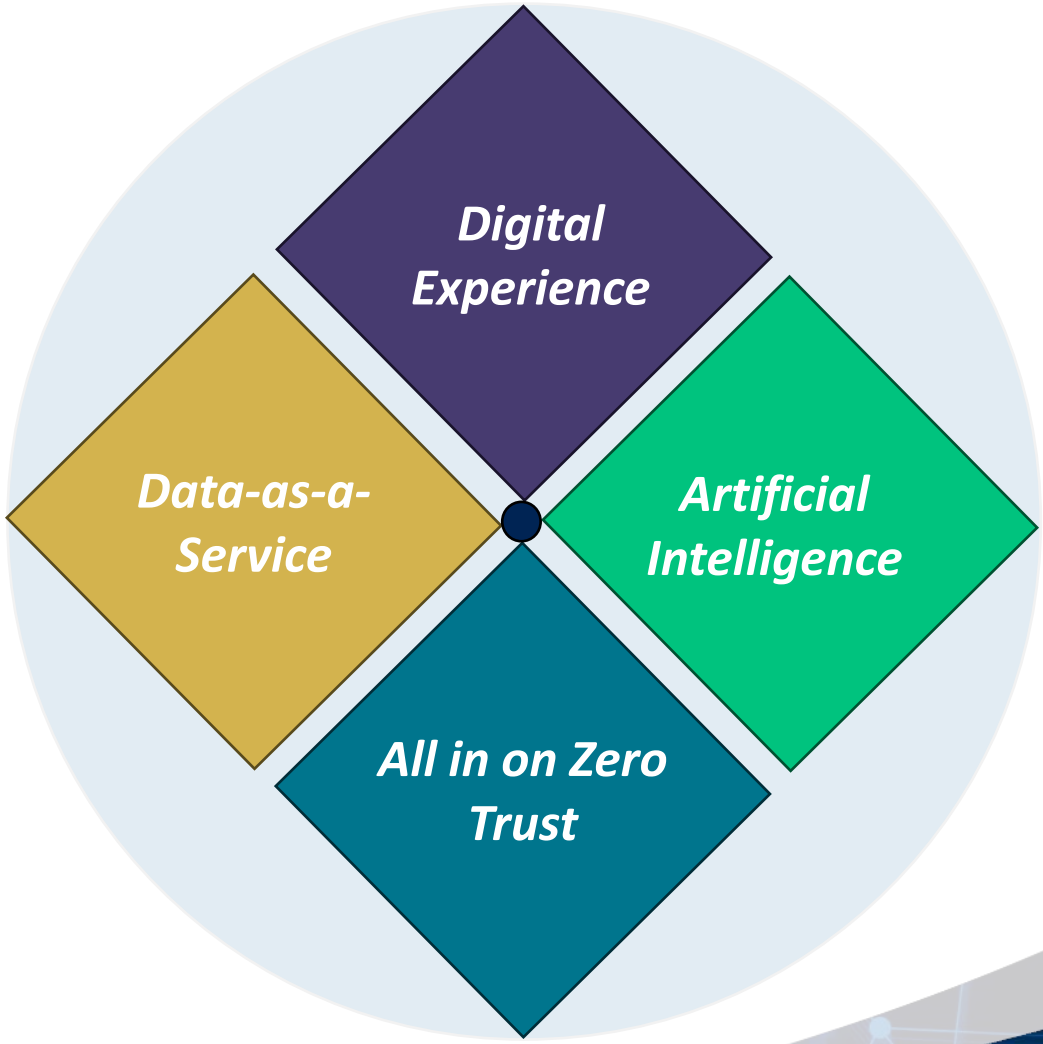
Reduce friction to enable and ensure trustworthy use of AI to contribute to innovative solutions to the world's problems.

All in on Zero Trust

Implementing a modern network design to integrate zero trust principles in cloud architecture, focusing on a security model that integrates the principles across the entire IT environment. to inform nearly all access decisions and interactions between individuals, devices, infrastructure, systems, and data.

Data-as-a-Service

Using the cloud to deliver data storage, integration, processing, and/or analytics services and data structured in a way to be fully accessible, usable, open, and available to help spur innovation.



CIO FY24 Initiatives by Priority

Digital Experience

- Establish OCIO Digital Experience team
- Launch Employee Experience campaign
- Centralize IT device procurement and provisioning

Artificial Intelligence

- Pilot AI leveraging AI platforms and MLOps
- Develop AI Governance

All in on Zero Trust

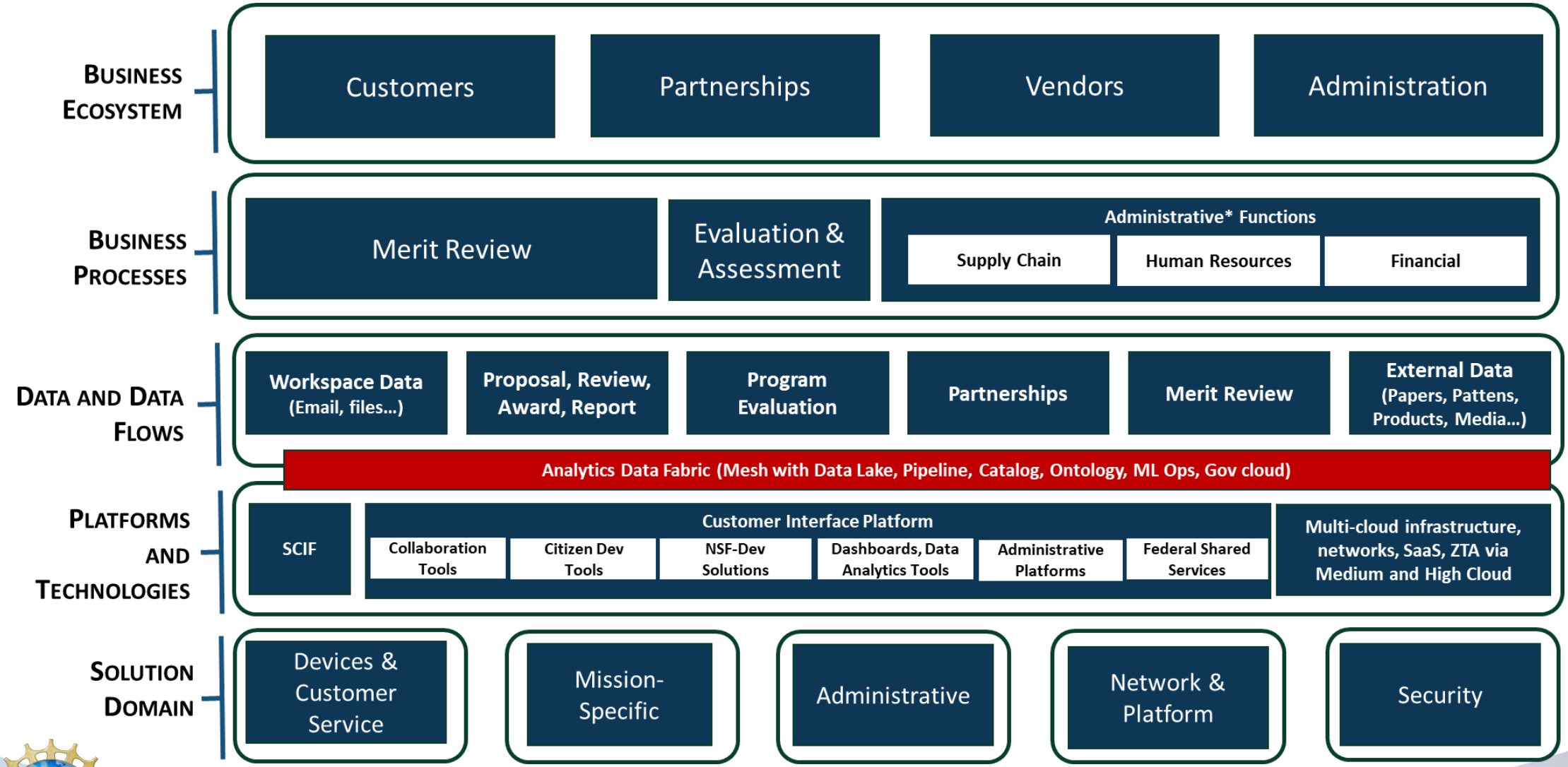
- Centralize Cloud services
- Complete Phishing-proof Multi-Factor Authorization (MFA)
- Evaluate use of derived credentials

Data-as-a-Service

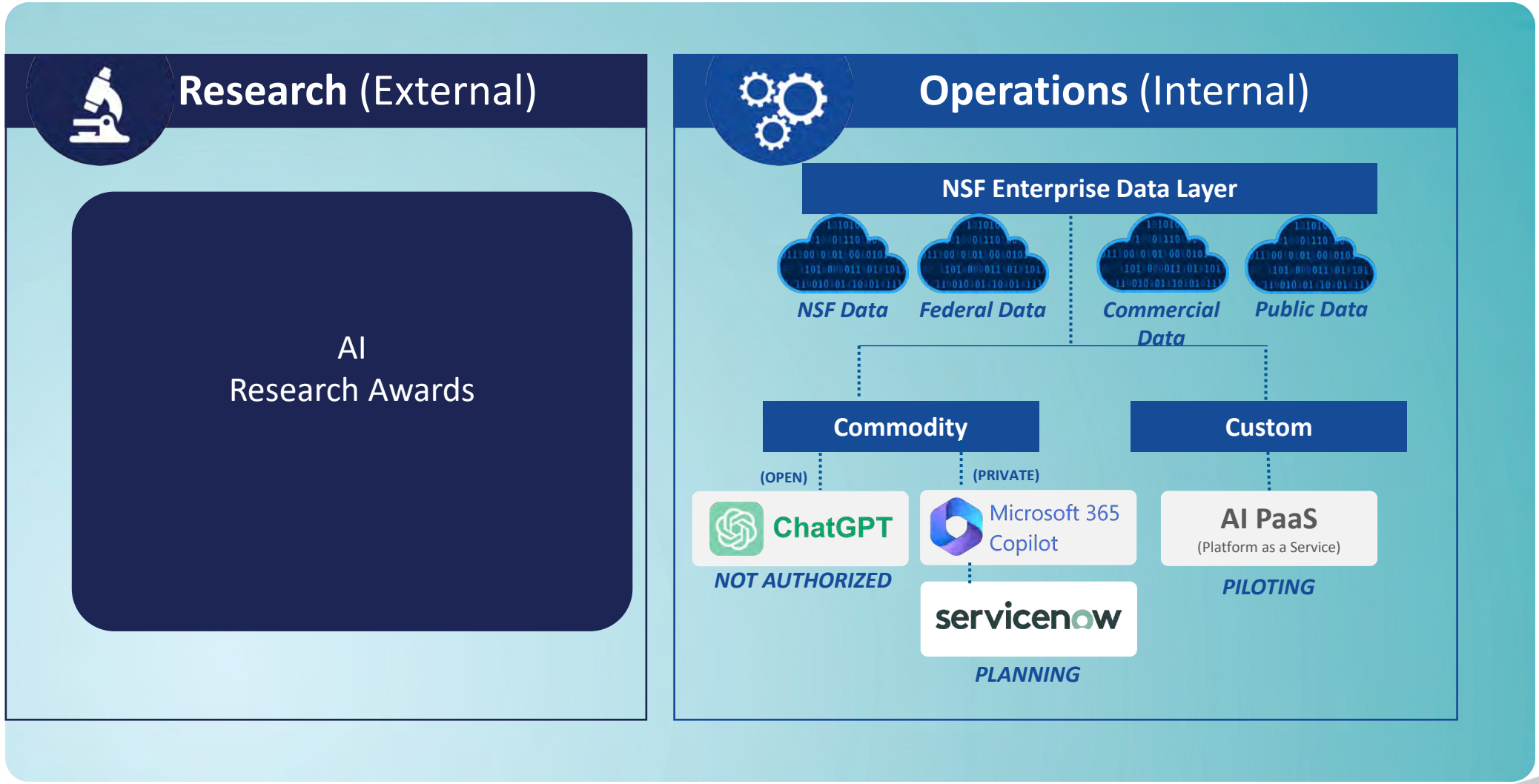
- Leverage AI Pilots to initialize NSF's enterprise data mesh
- Accelerate data cataloging process with automation

KEY: Enhance/Accelerate New Initiative

Moving to a Service Architecture



AI Concept


Research (External)
AI
Research Awards
Operations (Internal)
NSF Enterprise Data Layer
NSF Data
Federal Data
Commercial Data
Public Data
Commodity
Custom
(OPEN)
(PRIVATE)
ChatGPT
NOT AUTHORIZED
Microsoft 365 Copilot
servicenow
PLANNING
AI PaaS
(Platform as a Service)
PILOTING

Thoughts on Looking Forward

- Don’t break anything
- Scale NSF – CHIPS and Science Act of 2022
- Empower mission areas to derive more value from NSF data
- Leverage investments in a few enterprise platforms
- Align all IT investments to enterprise data services
- Lean into emerging technologies (e.g. AI)

BOAC Subcommittee on NSF's Information Technology and Enterprise Architecture Recommendations—March 2024

Introduction

The BOAC IT Subcommittee has reviewed NSF's IT Strategy and related architecture plans and is providing a list of informed recommendations for changes in process, direction, and potential investment in new and emerging technologies for possible implementation in the next budget year.

Subcommittee members were unanimous in their belief that significant progress has been made by the CIO's office on the 2022 BOAC recommendations. In particular, the alignment of the OCIO operating structure to the government-wide OCIO operating model is noted. These improvements should be made clear to partners across government.

The CIO has prioritized six core IT functions and recognizes four strategic opportunities: Digital Experience, Artificial Intelligence, All-in on Zero Trust, and Data-as-a-Service. The CIO characterized each of these core functions and strategic opportunities in terms of their maturity and resource levels.

The Subcommittee's four 2023 recommendations focus on the key areas within the CIO's priorities that are most impactful to the success of all the OCIO's strategies and core functions and require the CIO's focused attention in 2024. The Subcommittee's recommendations are designed to provide a framework from which the CIO can reasonably set the stage for long-term success while maintaining core IT capabilities that NSF requires for mission success.

The Subcommittee's primary guidance to the OCIO is: Emphasis must be placed on establishing an appropriate balance between NSF-wide initiatives and maintaining OCIO core IT functions.

Priority Areas for Recommendations

1. **The OCIO should fundamentally restructure its culture and relationships with NSF Directorates and external partners by building a Stakeholder Engagement Core Function for both internal and external customers. This will lead to an alignment of OCIO's strategies and resource allocation decisions to NSF's mission and business process. Emphasis needs to be placed on establishing an appropriate balance between NSF priorities/core IT functions, prioritization, and the importance of each.**

    1.1 Develop a strategic planning and stakeholder engagement process to understand IT requirements within NSF, with a specific focus on emergent requirements that span all NSF Directorates, such as AI and cybersecurity.

    1.2 Create a consumable view of NSF's IT budget, including how the OCIO's budget can supplement and support Directorate IT budgets and how budget responsibility or funds management will shift. Communicate this across the Agency for current and future budgets to ensure that momentum on key initiatives continues even if funding or primary oversight responsibility shifts.

1.3 Redefine key interaction points inside and outside of NSF under a new working model. Define expectations (both ways) and specific communication channels/protocols. This will ensure that there is clarity about new operating processes and ensure communications flow between appropriate parties per new roles and responsibilities.

2. OCIO should establish its own AI Innovation Center to build and iterate on end-to-end AI development (both commercial off-the-shelf and In-house development) in order to ensure efforts align with rapidly emerging policy, data standards, and NSF technical architecture standards, and enable NSF to adapt to continuously evolving AI technologies.

2.1 Align a continuous upskilling strategy with the pace of AI and data technology. Develop a strategy to educate the data science community, including citizen developers, and to continually train the workforce on generative AI, policy, and any new AI developments to empower them to identify and implement valuable AI deliveries to improve experiences and efficiency.

2.2 Dedicate resources for prototyping. Have an intentional budget for exploration (including for generative AI) for internal and off-the-shelf development. Adapting Generative AI for NSF will require customizing foundation AI model(s) based on NSF knowledge sources and budget allocations (for technology and human resources) for initial development and continued maintenance to ensure NSF's AI deployments stay current without getting stale.

2.3 Define AI inspection/verification processes per proposed government operating model at the Agency level service for efficiency of costs and pace. As AI deliveries progress from discriminative to generative, verification of results requires intentional effort to ensure it scales effectively for the variety of use cases. NSF could utilize generative AI deliveries for content generation, extraction, summarization, upgrading search and more. A standard verification process will help the developers deploy these efficiently while ensuring it meets quality and ethical requirements. NSF should consider sharing their learnings with other agencies with authorities in this space.

2.4 Ensure NSF policies apply to all AI use cases within NSF. NSF's AI policy has exceptions for its merit review process, common commercial products, and some use cases within the NCSES. Even if there are reporting limitations, all use cases need to apply to the principals and practices set forth by NSF. If needed, policies should be expanded to clearly handle the exceptions (stating how they will comply, even if not being reported).

3. Focus on IT governance via a realigned Agency IT Decision Framework that is consistent with the OCIO's new roles and responsibilities. Create NSF-wide IT policies and standard operating procedures (SOPs) that build on current OCIO-centric policies and SOPs to establish a common view that is accepted by the Directorates and is understandable to

citizens. This Framework should include AI policies, data inventories, code inventories, cybersecurity policies (including supply chain), records management, privacy, etc.

3.1 Creation of an NSF intra-agency IT Committee devoted to the responsible use of emergent technologies and Federal IT policies. The IT Committee would develop standards for AI policies and adoption, FISMA, data inventories, code inventories, cybersecurity policies (including supply chain), records management, privacy, and other areas identified by the CIO as critical to the functioning of NSF.

3.2 For AI and cybersecurity, OCIO should take the lead to set SOPs, policies and adoption practices. These two areas span every aspect of NSF business processes and mission delivery and should be used by the OCIO to demonstrate clear value through thought leadership practices that touch on merit review processes, privacy concerns and other NSF-wide issues.

3.3 OCIO should develop a common data dictionary when looking at data assets across the Agency—FISMA, security, data catalog, records management, and privacy assessments should all be mapping back to a common inventory.

4. OCIO should propose actions to ensure proper end-to-end security in the merit review process in order to protect the integrity of intellectual property and national assets created in the research process. Inform mission areas of gaps and opportunities to close gaps through technology and/or process. Enable the research community to adopt NSF-mandated secure platforms through strong partner engagement to increase transparency and control of the data.

4.1 Seek opportunities to mature the security of the end-to-end merit review/grants management process and consider leveraging best practices from other Federal agencies.

4.2 Provide technical support for NSF to gain more secure and transparent data from research to results.

4.3 Continue evaluating opportunities for shared services with other Federal agencies.

4.4 Consider enhancements in technology and process expectations to include:

4.4.1 Integrate cybersecurity capabilities into the grants workflow.

4.4.2 Ensure grantees understand the IT security expectations that the government expects to make use of any products or data that is generated.

4.4.3 Grantees should expect that they could be inspected/audited and action taken if security protocols are not meeting expected standards.

BOAC MEETING

Subcommittee on NSF's Information Technology and Enterprise Architecture Strategy

March 4, 2024

Subcommittee on NSF's Information Technology and Enterprise Architecture Strategy Charge: Prepare a bulleted list of recommendations regarding the direction of IT at NSF, and/or suggestions for leading-edge technologies on the horizon for potential implementation in the next budget year.

Subcommittee Members

Presenter
Dr. Tilak Agerwala: Vice President IBM (Retired)—**Co-Chair**
Bill Valdez: CEO Global Innovation Associates; Former Director (SES) at U.S. Department of Energy, Office of Science—**Co-Chair**
Dr. Lee Cheatham: Director of Technology Deployment and Outreach, Pacific Northwest National Laboratory (Retired)
Dr. Viji Krishnamurthy: Senior Director, Product management, Oracle Cloud Infrastructure & AI services
Ron Bewtra: Director, Leadership High Performance Computing, Hewlett Packard Enterprise; Former Chief Technology Officer, US Department of Justice
Suzette Kent: CEO Kent Advisory Services; Former Federal CIO for the US

Recommendations Overview

Recommendation
R1: The OCIO should fundamentally restructure its culture and relationships with NSF Directorates and external partners by building a Stakeholder Engagement Core Function for both internal and external customers
R2: OCIO should establish its own AI Innovation Center to build and iterate on end-to-end AI development (both commercial off-the-shelf and In-house development)
R3: Focus on IT governance via a realigned Agency IT Decision Framework that is consistent with the OCIO's new roles and responsibilities.
R4: OCIO should propose actions to ensure proper end-to-end security in the merit review process in order to protect the integrity of intellectual property and national assets created in the research process.

1. The OCIO should fundamentally restructure its culture and relationships with NSF Directorates and external partners by building a Stakeholder Engagement Core Function for both internal and external customers. This will lead to an alignment of OCIO's strategies and resource allocation decisions to NSF's mission and business process. Emphasis needs to be placed on establishing an appropriate balance between NSF priorities/core IT functions, prioritization, and the importance of each.

1.1 Develop a strategic planning and stakeholder engagement process to understand IT requirements within NSF, with a specific focus on emergent requirements that span all NSF Directorates, such as AI and cybersecurity.

1.2 Create a consumable view of NSF's IT budget, including how the OCIO's budget can supplement and support Directorate IT budgets and how budget responsibility or funds management will shift. Communicate this across the Agency for current and future budgets to ensure that momentum on key initiatives continues even if funding or primary oversight responsibility shifts.

1.3 Redefine key interaction points inside and outside of NSF under a new working model. Define expectations (both ways) and specific communication channels/protocols. This will ensure that there is clarity about new operating processes and ensure communications flow between appropriate parties per new roles and responsibilities.

2. OCIO should establish its own AI Innovation Center to build and iterate on end-to-end AI development (both commercial off-the-shelf and In-house development) in order to ensure efforts align with rapidly emerging policy, data standards, and NSF technical architecture standards, and enable NSF to adapt to continuously evolving AI technologies.

2.1 Align a continuous upskilling strategy with the pace of AI and data technology. Develop a strategy to educate the data science community, including citizen developers, and to continually train the workforce on generative AI, policy, and any new AI developments to empower them to identify and implement valuable AI deliveries to improve experiences and efficiency.

2.2 Dedicate resources for prototyping. Have an intentional budget for exploration (including for generative AI) for internal and off-the-shelf development.

2.3 Define AI inspection/verification processes per proposed government operating model at the Agency level service for efficiency of costs and pace. As AI deliveries progress from discriminative to generative, verification of results requires intentional effort to ensure it scales effectively for the variety of use cases.

2.4 Ensure NSF policies apply to all AI use cases within NSF. NSF's AI policy has exceptions for its merit review process, common commercial products, and some use cases within the NCSES. Even if there are reporting limitations, all use cases need to apply to the principals and practices set forth by NSF.

3. Focus on IT governance via a realigned Agency IT Decision Framework that is consistent with the OCIO's new roles and responsibilities. Create NSF-wide IT policies and standard operating procedures (SOPs) that build on current OCIO-centric policies and SOPs to establish a common view that is accepted by the Directorates and is understandable to citizens. This Framework should include AI policies, data inventories, code inventories, cybersecurity policies (including supply chain), records management, privacy, etc.

3.1 Creation of an NSF intra-agency IT Committee devoted to the responsible use of emergent technologies and Federal IT policies. The IT Committee would develop standards for AI policies and adoption, FISMA, data inventories, code inventories, cybersecurity policies (including supply chain), records management, privacy, and other areas identified by the CIO as critical to the functioning of NSF.

3.2 For AI and cybersecurity, OCIO should take the lead to set SOPs, policies and adoption practices. These two areas span every aspect of NSF business processes and mission delivery and should be used by the OCIO to demonstrate clear value through thought leadership practices that touch on merit review processes, privacy concerns and other NSF-wide issues.

3.3 OCIO should develop a common data dictionary when looking at data assets across the Agency—FISMA, security, data catalog, records management, and privacy assessments should all be mapping back to a common inventory.

4. OCIO should propose actions to ensure proper end-to-end security in the merit review process in order to protect the integrity of intellectual property and national assets created in the research process. Inform mission areas of gaps and opportunities to close gaps through technology and/or process. Enable the research community to adopt NSF-mandated secure platforms through strong partner engagement to increase transparency and control of the data.

4.1 Seek opportunities to mature the security of the end-to-end merit review/grants management process and consider leveraging best practices from other Federal agencies.

4.2 Provide technical support for NSF to gain more secure and transparent data from research to results.

4.3 Continue evaluating opportunities for shared services with other Federal agencies.

4.4 Consider enhancements in technology and process expectations to include:

- 4.4.1 Integrate cybersecurity capabilities into the grants workflow.
- 4.4.2 Ensure grantees understand the IT security expectations that the government expects to make use of any products or data that is generated.
- 4.4.3 Grantees should expect that they could be inspected/audited and action taken if security protocols are not meeting expected standards.