

National Science Foundation
Advisory Committee for Business and Operations
Fall 2014 Meeting

December 11-12, 2014
Room 1235

Thursday, December 11, 2014

1:00 pm **Welcome/Introductions/Recap of Recommendations**

Co-Chairs: Charlene Hayes and Greg Jackson

1:15pm **BFA/OIRM Updates**

Presenters: Marty Rubenstein (Office of Budget, Finance and Award Management), Joanne Tornow (Office of Information and Resource Management), Tony Gibson/Julia Jester (Office of Legislative and Public Affairs)

2:00 pm **ITRAK**

On October 14, 2014 the National Science Foundation (NSF) successfully implemented its financial system modernization initiative, iTRAK. There are many factors that contributed to this success, including a rigorous change management strategy. The iTRAK Project Manager (PM) will describe the approach taken to successfully implement iTRAK and present current statistics on transaction volumes, user training and user provisioning.

Change management continues to be a priority for the project team and ensuring that the NSF stakeholders successfully adapt to iTRAK is an ongoing effort. Some of the changes that the iTRAK users had to adapt to include new business processes, a new account code structure and new ways to access financial data. The PM will present a high level of the iTRAK Change Management Strategy and efforts around measuring change. The presentation will include past survey results that helped transform the communication and outreach approach. As iTRAK continues activities throughout the stabilization period of the project, communications and measuring change is more important than ever.

Committee Action/Feedback:

It would be helpful for the committee to provide feedback on the planned activities that the iTRAK Communications Team will undergo as part of stabilization period. These activities are focused on ensuring the stakeholders are successfully adapting to iTRAK. The communications team will analyze if users understand the new business processes and are using the system to successfully do their job. The iTRAK communications team will go out with a survey in January 2015 that will be used as the basis for this analysis.

Presenter: Gisele Holden

2:45 pm **Break**

3:00 pm **NSF Relocation**

Presentation will cover:

- Current schedule, including the impact of the Union impasse on the schedule and resulting potential delay costs. Explain the competing priorities which are hindering effective decision-making;
- Efforts to communicate the change in timing of the move with staff and establishing move assumptions in the face of uncertainty;
- Design: key technology infrastructure enhancements for NSF in the new HQ
- Working with the City and local economic businesses to ensure development and support is in place in time for NSF's move.

Committee Action/Feedback:

- General comments or recommendations to NSF leadership regarding the delay;
- How to ensure positive momentum for the move with staff in the face of uncertainty;
- Major move assumptions: maintaining or suspending merit review panels during some portion of the planned 3-month move process from Arlington to Alexandria – potential cost savings and move efficiency vs. continuity of key mission activity (using dual operations);
- In which areas of business community engagement should NSF invest the most time?

Presenter: Mignon Anthony

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Thursday, December 11, 2014 (cont.)

3:30 pm

Succession Planning

Succession planning is widely regarded as an important aspect of federal workforce planning and development with the primary purpose of having continuity of leadership and operations for an agency's programs. The presentation will provide data that motivate the importance of a more active approach to succession planning for NSF as we look toward a headquarters relocation. Data will include information on workforce composition; retirement eligibility; historical loss rates; time to hire; and other items that influence overall workforce considerations, including attention to issues in particular job families and to executive-level positions. The presentation will then describe some typical approaches to succession planning; identify elements of the NSF workplace environment that promote or challenge standard approaches; and describe activities currently underway that speak to improving our succession planning efforts.

The NSF approach to meeting its mission, with its emphasis on transformative research, addressing national needs through research, and organizational excellence as a federal science agency has elements of both continuity and disruption. Bringing new ideas and directions to all aspects of NSF's work is a core element of NSF's approach to workforce and succession planning, particularly as reflected in its extensive use of rotators. Most succession planning approaches assume that there is stable leadership in place and a pool of internal candidates for opportunities beyond the entry level. This is not the situation in all parts of NSF. The core questions for Committee discussion and feedback are

- How might NSF adapt standard approaches to succession planning or create new approaches that take advantage of the dynamism of the NSF workforce, including its rotator population?
- Are there approaches to succession planning inside or outside the federal government that meld the dual needs of continuity and disruption?
- What strategies other than formal succession planning might help us to create opportunities for advancement of our staff leading to NSF retaining experienced staff through the relocation?

Presenters: Judy Sunley/Gerri Ratliff

4:15 pm

Managing Change at NSF

The agenda for this meeting includes items on iTRAK, the NSF relocation and succession planning--all items that have significant change management components associated with them. Committee discussants with experience in the change management arena and/or who have dealt recently with change management challenges will share their learnings and experiences with NSF.

Committee Action/Feedback:

Goal is to help NSF more effectively deal with change management issues, recognizing that these issues are common across many organizations. Are there best practices or tools that can be used at NSF?

Discussants: Kathy Newcomer/Doug Webster

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Thursday, December 11, 2014 (cont.)

5:00 pm

Strategic Review Process: A Mechanism to Empower the Agency to Effect Change

In the spring of 2014 NSF designed and conducted the first round of Strategic Reviews in response to the requirement of the Government Performance and Results Act (GPRA) Modernization Act of 2010. OMB Circular A-11(270.2) specifically requires that these reviews, which are designed to assess progress on an agency's strategic objectives set forth in the agency's strategic plan, should inform strategic decision-making, budget formulation, and near-term agency actions, as well as preparation of the Annual Performance Plan and Annual Performance Report.

Although the Strategic Reviews are a GPRA requirement, OMB gave agencies the flexibility to implement the reviews in a way that is useful for their own purposes. The Strategic Review Process that we developed provides an opportunity to use data and evidence to inform planning, decision making, and improvement. OMB was impressed with NSF's approach and is pointing to our process as a model for other agencies. Key to our success is the fact that we carefully and strategically chose questions that are important to NSF senior management. The engagement of senior leaders as active participants helped to target the questions in a way that informs decision-making. OMB appreciated the focus on opportunities for improvement and there do not appear to be negative consequences to divulging challenges uncovered in the reviews.

This presentation will provide an overview of the FY 2014 process highlighting specific aspects that made the process successful. Examples of how the reviews will be used to effect change at the agency will be discussed. The next round of Strategic Reviews will begin in earnest in January of 2015. We are currently preparing for the reviews by engaging senior leaders in discussions of strategic directions and topics for the reviews. The Advisory Committees advice will help us improve the process as we move forward.

Committee Action/Feedback:

NSF is enthusiastic about the potential for Strategic Reviews to help us effect meaningful change within the agency. However, we recognize that any new process is fragile at conception. As we begin the second round of strategic reviews, we seek the AC's advice on how to institutionalize the process and make it more robust. Although it is tempting to be satisfied with our early successes, if we do not anticipate possible sources of resistance at this critical stage, those successes could be short-lived. We seek the committees input on how to minimize and manage resistance to change so that we can maintain momentum and continue to improve.

Presenter: Pam O'Neil

Discussants: Kathy Newcomer/John Palguta

5:45 pm

Adjourn

6:30 pm

Dinner

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Friday, December 12, 2014

8:30 am

Risk-Based Management

BFA seeks to implement a risk management approach as a tool to address competing work priorities. Like many governmental organizations, NSF is faced with increased requirements and limited resources, challenging our ability to meet core mission requirements. The agency is compelled to “do less with less” making a risk-based approach to managing organizational priorities an attractive solution.

NSF is one of a number of Government organizations turning to the use of Enterprise Risk Management to ensure that it has a consistent and systematic way to address major risks facing the organization, understand the potential impacts of those risks, and can make competent decisions concerning how to apply resources. Some risks may require extra emphasis and resources, while other risk areas may need to be accepted or dealt with less vigorously. Enterprise Risk Management provides a framework within which to address these issues.

BFA's interest in applying an Enterprise Risk Management approach to organizational priorities and workload challenges has been a natural progression from previous efforts made to address BFA Strategic Priorities identified during 2011 – 2012 as part of an internal management initiative. “Risk, Costs and Benefits” was one of three major working groups comprising the BFA Strategic Priorities effort. Because this working group issued recommendations regarding potential methods to better manage resources by reconsidering time and effort spent on traditional work areas, the BFA Office Head/CFO has tasked her Senior Staff with exploring a formal Enterprise Risk Management framework.

Although BFA is socializing a potential methodology for incorporating an Enterprise Risk Management structure within the organization, many open questions remain. BFA senior managers need to fully understand the value proposition, engaging in BFA's own “risk/benefits” analysis regarding how a formalized ERM approach will help the organization. As we move to obtain full buy-in from BFA senior managers, the Advisory Committee could help us with some key insights:

- Does your organization have a formal approach for identifying risks, and if so, what process and structures are in place?
- What type of investment (time across different personnel levels, funding) do you think is required to launch and then maintain a risk management process?
- In your experience, do you use dedicated resources to support your risk management approach, or do you distribute the effort across the organization?
- What measures would indicate that a risk management approach is successful?

Presenters: Jeff Lupis

Discussant: Doug Webster/Joe Thompson

9:30 am

Committee Discussion: Prepare for Meeting with Dr. Córdova and Dr. Buckius

10:15 am

Break

10:30 am

Discussion with Dr. Córdova and Dr. Buckius

11:30 am

Wrap-Up/Loose Ends

12:00 pm

Adjourn

Title	Meeting Date	Recommendation	NSF Contact	Status	Explanation
BSR Subcommittee	Spring 2014	While some disagreed, the Committee acknowledges the reluctance of NSF to use business administrators from other NSF large facilities as BSR reviewers, citing issues of conflict of interest and recompetition of facilities. The BSR teams have recently included retired NSF subject matter experts. Committee endorsed this approach as a very good compromise and encouraged this process to continue.	Matt Hawkins; Florence Rabanal	Closed	
BSR Subcommittee	Spring 2014	While collaboration between the BSR program and DACS continues to improve, there is a need to formalize the handoff process from the BSR to DACS for the most effective postaward monitoring of large facilities	Matt Hawkins; Florence Rabanal	Closed	
Linking NSF Organizational Goals and Objectives with Employee Performance Plans	Spring 2014	NSF staff is on the right track for dealing with this highly complex, but very important issue. NSF has taken only initial steps toward linking performance measures to plans.	Judith Sunley	Closed	The Committee voted to accept the report with enthusiasm and to forward it to Marty Rubenstein and Cliff Gabriel.
Measuring Effective Policy Implementation: Uniform Guidance	Spring 2014	Determine policy drivers/motivators behind the UG and its metrics; focus communications on those policy motivators of particular concern to NSF. Appropriately manage the message, conveying what is of importance to NSF, while making clear that the metrics are only measures of progress toward NSF's goals and are not goals themselves.	Jean Feldman; Alexander Wynnyk	In Progress	
Measuring Effective Policy Implementation: Uniform Guidance	Spring 2014	Communicate goals and objectives and how chosen measures would be used to assess progress both within NSF and the awardee community.	Jean Feldman; Alexander Wynnyk	In Progress	
Measuring Effective Policy Implementation: Uniform Guidance	Spring 2014	Continue communications with OMB and COFAR regarding the types of problems that should be expected given the short amount of time NSF and its awardees are being given to implement the extensive new requirements of the UG.	Jean Feldman; Alexander Wynnyk	In Progress	When the Committee presented these observations and recommendations to Director Córdoba and Deputy Director Marrett, Dr. Marrett suggested the formation of a subcommittee to further assist NSF in determining how to manage UG implementation and the related metrics.
Virtual Panels	Spring 2014	Diversity of virtual panel technology is important, but NSF must be careful to watch that it does not unduly complicate the Foundation's work. The Committee has earlier suggested that NSF was using too many different technologies, and applauded the move toward a smaller number of standard technologies.	Jose Munoz	Closed	
Virtual Panels	Spring 2014	It may be difficult to obtain good data on how panelists evaluate virtual versus face-to-face panels, but it is important, particularly to help NSF strike the right balance between virtual and face-to-face panels. The Committee suggested that perhaps direct interviews with samples of panelists might yield better data than questionnaires sent to all panelists.	Jose Munoz	Closed	
Virtual Panels	Spring 2014	NSF should consider carefully its policies and expectations for end-user equipment such as webcams and headsets. Virtual panels do not work well when panelists lack this equipment, but the Foundation does not yet have clear policies for who should purchase such equipment, and how it should be distributed and retrieved. Currently the burden rests entirely on panelists, and this may be an inappropriate transfer of costs from the Foundation to panelists.	Jose Munoz	Closed	

Backgrounder: Fall 2014

NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Successful implementation of iTRAK and the continuing change management effort

Presentation:

On October 14, 2014 the National Science Foundation (NSF) successfully implemented its financial system modernization initiative, iTRAK. There are many factors that contributed to this success, including a rigorous change management strategy. The iTRAK Project Manager (PM) will describe the approach taken to successfully implement iTRAK and present current statistics on transaction volumes, user training and user provisioning.

Change management continues to be a priority for the project team and ensuring that the NSF stakeholders successfully adapt to iTRAK is an ongoing effort. Some of the changes that the iTRAK users had to adapt to include new business processes, a new account code structure and new ways to access financial data. The PM will present a high level of the iTRAK Change Management Strategy and efforts around measuring change. The presentation will include past survey results that helped transform the communication and outreach approach. As iTRAK continues activities throughout the stabilization period of the project, communications and measuring change is more important than ever.

Committee Action/Feedback:

It would be helpful for the committee to provide feedback on the planned activities that the iTRAK Communications Team will undergo as part of stabilization period. These activities are focused on ensuring the stakeholders are successfully adapting to iTRAK. The communications team will analyze if users understand the new business processes and are using the system to successfully do their job. The iTRAK communications team will go out with a survey in January 2015 that will be used as the basis for this analysis.

Contact Person(s)[name, phone, e-mail]:

Gisele Holden – gholden@nsf.gov (703-292-4455)
iTRAK Project Manager

Jackie Angelelli-Golnek – jangelel@nsf.gov (703-292-4465)
iTRAK Change Management Lead



Business and Operations Advisory Committee

December 11, 2014



Why iTRAK

TRAK Benefits

Management Insight

- Enhances program management reporting
- Improves access to and availability of more detailed information
- Improves data quality

Operational Excellence

- Simplifies and standardizes business processes
- Increases automation of business processes and technology upgrades
- Integrates data and processes

Control & Compliance

- Enables greater transparency
- Automates internal controls
- Enhances ability to comply with reporting regulations

iTRAK Implementation

- iTRAK went live on 10-14-2014, on schedule and within budget
- Factors that contributed to iTRAK's successful implementation include:
 - Broad Perspective
 - Technology - Leveraged a cloud-based COTS financial system solution and followed a proven methodology and streamlined approach to integrate iTRAK with NSF's internal and external systems.
 - People - Developed a robust change management program that took into consideration the NSF culture.
 - Business Process - Modified NSF's business processes to align with the COTS business process model and did not customize the system
 - Data – executed a rigorous data preparation and cleansing program prior to migrating data into iTRAK
 - Visible Executive Support and Involvement
 - Collaboration - Partnership among the BFA and OIRM organizations, and the NSF program offices.

iTRAK Size and Impact

iTRAK HAS PROCESSED

OVER **80,939** PAYMENTS

TOTALING **\$813M**

\$491M

HAS BEEN COMMITTED or
OBLIGATED IN iTRAK
IN SUPPORT OF THE NSF MISSION

TRAINED

460+ USERS

IN MORE THAN **100**
CLASSROOM SESSIONS

iTRAK COMMAND CENTER

HAS OPERATED FOR **2** Months

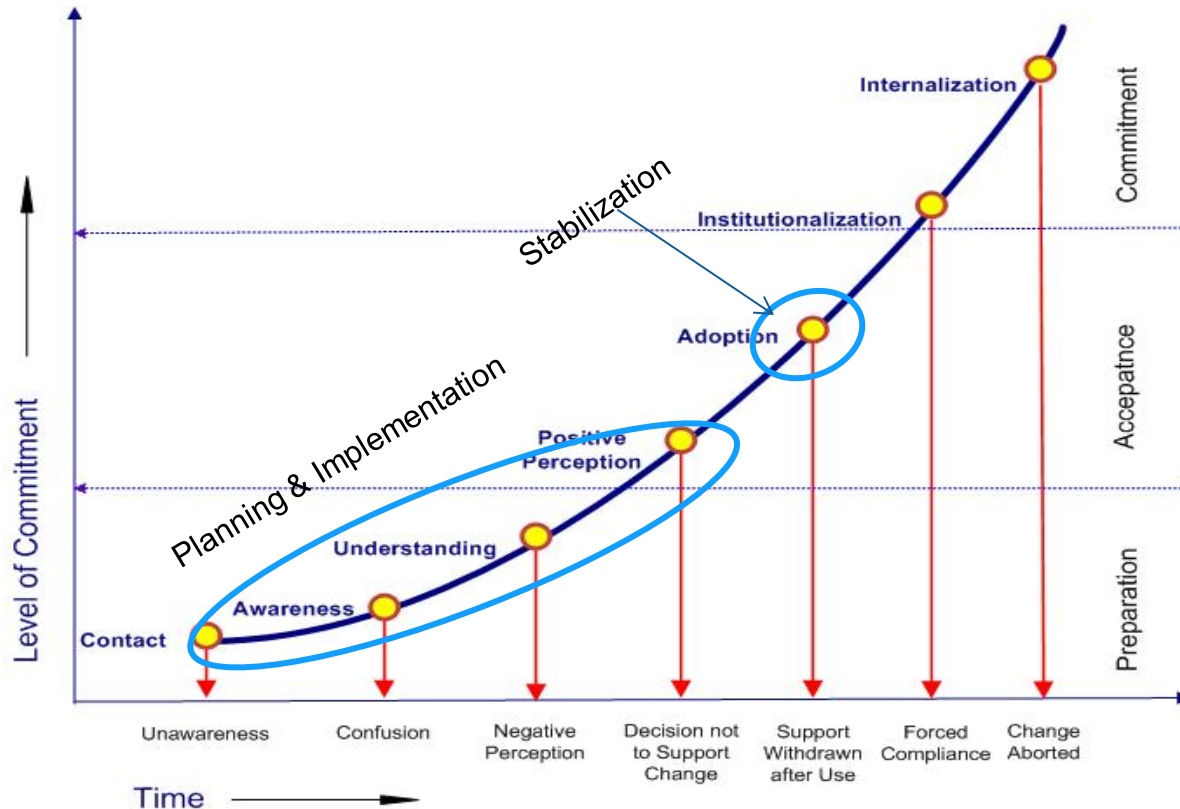
SUPPORTING **400+** USER VISITS



The iTRAK Change Management Strategy framework considers three overarching objectives, supported by nine key activity areas

Objective	Activity Area	Summary of Actions and Benefits
1. Lead and Build Buy-In	Change Strategy	<ul style="list-style-type: none"> • Define vision and drivers for change and develop strategy for change • Establish clear need for change and direction for implementing change
	Change Leadership	<ul style="list-style-type: none"> • Support leadership early and throughout the project in managing change • Maintain consistent leadership advocacy and celebrate successes
	Stakeholder Engagement	<ul style="list-style-type: none"> • Engage stakeholders early and throughout the project • Develop a feeling of being invested in the new system and process
	Communications	<ul style="list-style-type: none"> • Deliver the right messages at the right time through the right channels • Build buy-in to change and understanding of new roles and responsibilities
2. Understand Impact and Build Capability	Business Process	<ul style="list-style-type: none"> • Assess how iTRAK will affect business processes • Enable adaptation of processes and development of process training
	Workforce	<ul style="list-style-type: none"> • Assess how iTRAK will affect workforce roles and responsibilities • Enable adaptation of organization/workforce and development of training
	Training	<ul style="list-style-type: none"> • Train workforce in new system, business processes, and roles • Enable workforce to successfully operate once iTRAK is deployed
3. Measure and Manage	Performance Management	<ul style="list-style-type: none"> • Measure change progress and evaluate change management performance • Enable continual improvement of change management approaches
	Project Management	<ul style="list-style-type: none"> • Integrate change management activities into the overarching iTRAK project • Enable effective management of change management efforts

“Change Curve”



- Communications are targeted to bring stakeholders through the “Change Curve”
- Questionnaires are used to measure progress toward acceptance and commitment

iTRAK Questionnaire Overview

- Four Stakeholder Questionnaires conducted during Planning and Implementation
 - Assess the effectiveness of iTRAK outreach and communication activities
 - Collect feedback on stakeholder awareness, understanding, and perception of the iTRAK effort
 - Determine areas to focus future iTRAK outreach and communication efforts
- Previous Questionnaire Results
 - Demonstrated increased awareness and understanding of iTRAK over time
 - Provided information on how stakeholders prefer to receive information
 - Revealed that stakeholders felt there was a need for iTRAK
 - Reported that stakeholders were not sure how iTRAK would impact their work
 - Identified differences in achieving the target commitment within various Divisions
- Now that iTRAK is deployed, we will continue to collect information about how stakeholders are adopting the new system and business processes

Stabilization Questionnaire

- Measure stakeholder adoption of iTRAK
 - Frequency of use
 - Impacts to ability to perform job functions
 - Impact on overall work, role, and responsibilities
- Understand perception of iTRAK
 - Are benefits understood
- Measure value of the resources provided to facilitate adoption
 - Command Center
 - Change Champions
 - iTRAK SharePoint Site
 - ITRAK Help Desk
- Seek input for continuous improvement

What we need from the B&O

- Provide feedback on the planned questionnaire that will be used to measure how users are adapting to the new business processes and the new system.
- What other tools should the communications team consider.
- What other type of outreach activities should the iTRAK communication team consider.

Backgrounder: Fall 2014
National Science Foundation
Advisory Committee for Business and Operations
December 11-12, 2014

Nature of Agenda Item: To present both challenges and progress on the new headquarters project and gain the Committee's insight, recommendations and/or response to this information.

Presentation:

- Current schedule, including the impact of the Union impasse on the schedule and resulting potential delay costs. Explain the competing priorities which are hindering effective decision-making;
- Efforts to communicate the change in timing of the move with staff and establishing move assumptions in the face of uncertainty;
- Design: key technology infrastructure enhancements for NSF in the new HQ
- Working with the City and local economic businesses to ensure development and support is in place in time for NSF's move.

Suggested Question Topics:

- General comments or recommendations to NSF leadership regarding the delay;
- How to ensure positive momentum for the move with staff in the face of uncertainty;
- Major move assumptions: maintaining or suspending merit review panels during some portion of the planned 3-month move process from Arlington to Alexandria – potential cost savings and move efficiency vs. continuity of key mission activity (using dual operations);
- In which areas of business community engagement should NSF invest the most time?

NSF Contact:

Mignon Anthony

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NSF New Headquarters *Update*



Advisory Committee
for
Business and
Operations

Fall Meeting

December 11, 2014
Mignon R. Anthony, Project Director



Progress
Schedule
Relocation Planning
Technology
Communications & Coordination

Office of Information and Resource Management

Progress



NSF New HQ Site: Facing Southwest – June 2014



Progress



3rd and 4th floors – December 1



Progress

3rd and 4th floors – December 4



Progress

NSF's Interior Space Design

In May 2014, NSF postponed the design effort to try and settle negotiations on space sizes with the AFGE Union.

Negotiations resulted in an impasse - September 2014.

Federal mediators ruling will require redesign.

Impact to overall move schedule is uncertain - not be known precisely until early next CY.

Relocation Planning Management

Focus - **Impact** on cost, time, services in both old and new locations

Establish **adjustable strategies**, assumptions, rules with universal application – product acquisition timing and move sequencing

- Develop multiple draft scenarios supporting a **3 month move period** with 3 prior months for IT installation, testing and services preparation:

e.g. Order of NSF moves by services, new organizational locations; weekly capacity goals and constraints, supporting panel activity during moves

- Define NSF business services in new HQ, isolate factors and criteria required for a successful ‘first presence’.
- Revalidate FY16 and 17 budget and procurement strategies by examining new and reuse equipment and furniture requirements against new HQ designs.

e.g. Conference rooms, IT areas, NSF Services areas, Physical security, etc.

Technology improvements

- **Consolidated Computer Room** - *½ current footprint*
- **Multiple Telecommunications paths per floor** - *superior wired and wireless services to end users*
- **Diverse external routing** – Redundant paths to new HQ for internet connectivity, “cloud” services, and teleworkers, minimize risk
- **Improved backup power configuration**; supplemental HVAC system with dedicated NSF generator
- **Full Voice over IP (VOIP)** with a single wire infrastructure - *Integrated voice and data to desktop and mobile devices*
- **Network-Integrated Electronic Security System** with proximity badge readers
- **Integrated, compatible and adaptable audio/video solutions** *for meetings, training, NSF communications and productions*

Communications & Coordination

INTERNAL

- **Direct Communications with Staff** - *regular organizational updates, special sessions upon request, project-based education*
- **Intranet-based updates** – *weekly photos, subject-based technical articles*
- **SharePoint and Idea Share** - *TBD surveys and campaigns*
- **Monthly Site Tours**
- **Pilots, proof of concept trials during 2015** - *VOIP, Sound masking*

EXTERNAL

City of Alexandria & local business community - *broker NSF interests in our new neighborhood e.g. childcare, modernized Metro stop, hotel/residential development*

Benchmarking - *staying abreast of best practices, lessons learned*

Questions



- Change management – how should NSF leadership maintain positive momentum with staff in the face of timing uncertainties?
- Managing the delayed project schedule with NSF staff – what criteria to use when prioritizing staff input as acceleration is required.
- Under the circumstances - should cost be the key driver when considering whether to maintain or suspend merit-review panels during all or portions of the move to Alexandria?
- Given conflicting priorities, how much attention should NSF give to new HQ business community engagement ?

Backgrounder: Fall 2014
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Assistance with Succession Planning

Presentation:

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Committee Action/Feedback

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- How might NSF adapt standard approaches to succession planning or create new approaches that take advantage of the dynamism of the NSF workforce, including its rotator population?
- Are there approaches to succession planning inside or outside the federal government that meld the dual needs of continuity and disruption?
- What strategies other than formal succession planning might help us to create opportunities for advancement of our staff leading to NSF retaining experienced staff through the relocation?

Contact Person(s)[name, phone, e-mail]:

- Judy Sunley, 703-292-4561, jsunley@nsf.gov
- Gerri Ratliff, 703-292-8315, gratlif@nsf.gov



Succession Planning

BOAC Discussion
December 11, 2014

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Human Resource Management
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Chief Information Officer



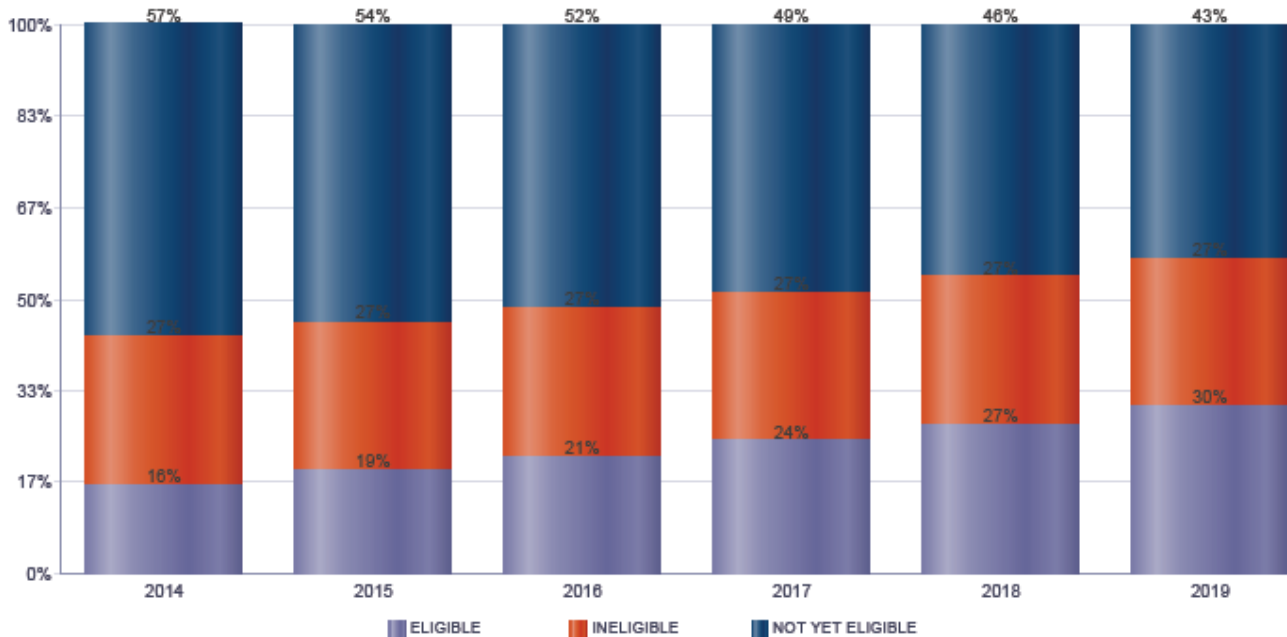
Questions for Discussion

- How might NSF **adapt standard approaches** to succession planning or **create new approaches** that take advantage of the dynamism of the NSF workforce, including its rotator population?
- Are there approaches to succession planning inside or outside the federal government that **meld the dual needs of continuity and disruption**?
- What strategies other than formal succession planning might help us to **create opportunities for advancement of our staff** leading to NSF retaining experienced staff through the relocation?



Retirement eligibility will double in the next five years

NSF Predicted Retirement Eligibility by Year
NSF EMPLOYEES (Excludes NSB and OIG)



This data set includes the retirement eligibility of staff onboard at the end of FY14.

Five-year retirement eligibility projections for those FY14 onboard staff are also included.

	2014	2015	2016	2017	2018	2019
ELIGIBLE	242	281	322	362	408	458
	18%	19%	21%	24%	27%	30%
INELIGIBLE	406	406	406	406	406	406
	27%	27%	27%	27%	27%	27%
NOT YET ELIGIBLE	858	817	777	737	691	641
	57%	54%	52%	49%	46%	43%
Total	1,504	1,504	1,505	1,505	1,505	1,505
	100%	100%	100%	100%	100%	100%

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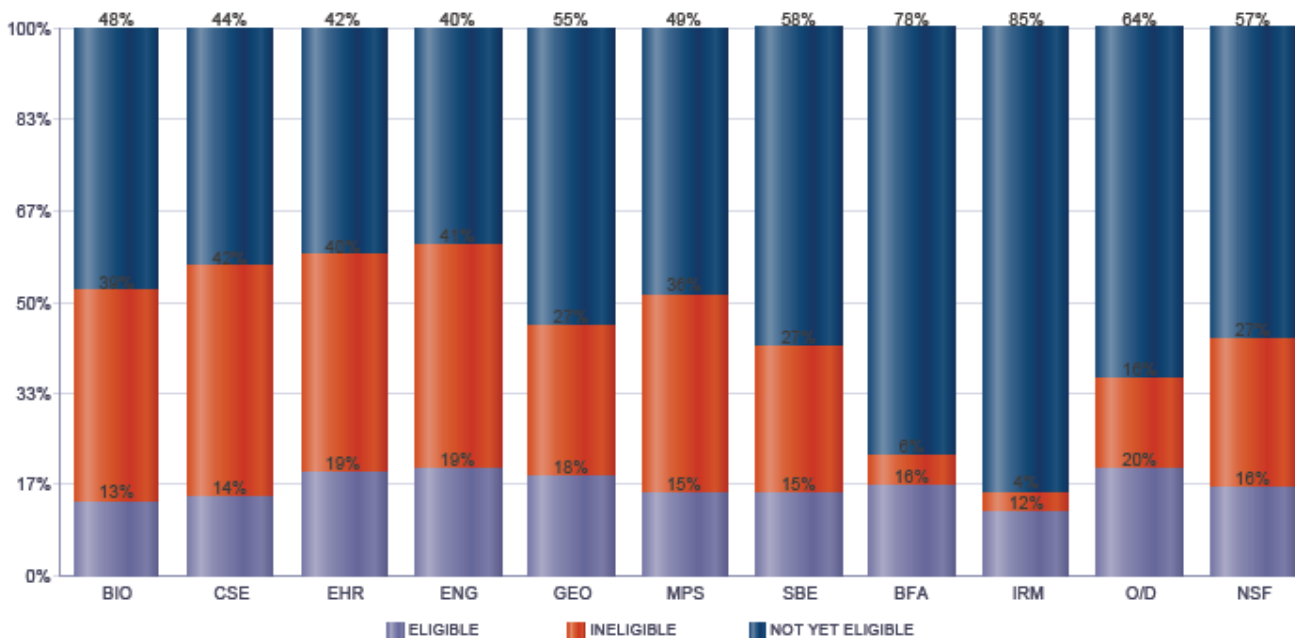
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Retirement Eligibility Varies by Organization

FY14 Retirement Eligibility by Directorate

NSF Employees (Excludes NSB and OIG)



	BIO	CSE	EHR	ENG	GEO	MPS	SBE	BFA	IRM	O/D	NSF
ELIGIBLE	17	18	30	30	32	25	18	26	22	24	242
	13%	14%	19%	19%	18%	15%	15%	16%	12%	20%	16%
INELIGIBLE	49	53	64	63	48	61	32	9	7	20	406
	39%	42%	40%	41%	27%	36%	27%	6%	4%	16%	27%
NOT YET ELIGIBLE	61	55	67	61	96	82	70	124	161	79	856
	48%	44%	42%	40%	55%	49%	58%	78%	85%	64%	57%
Total	127	126	161	154	176	168	120	159	190	123	1,504
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

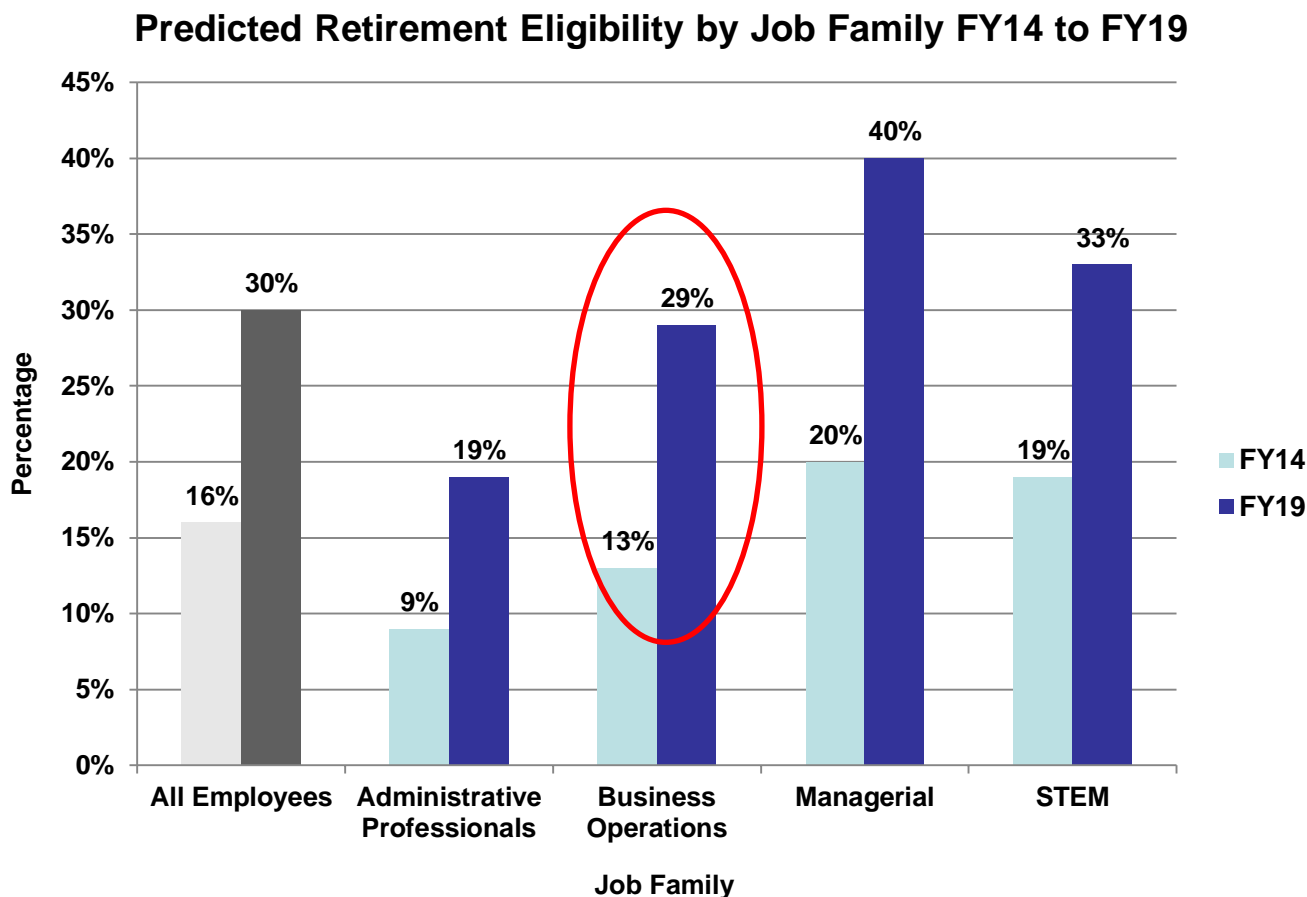
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Retirement Eligibility will more than double in the business operations job family

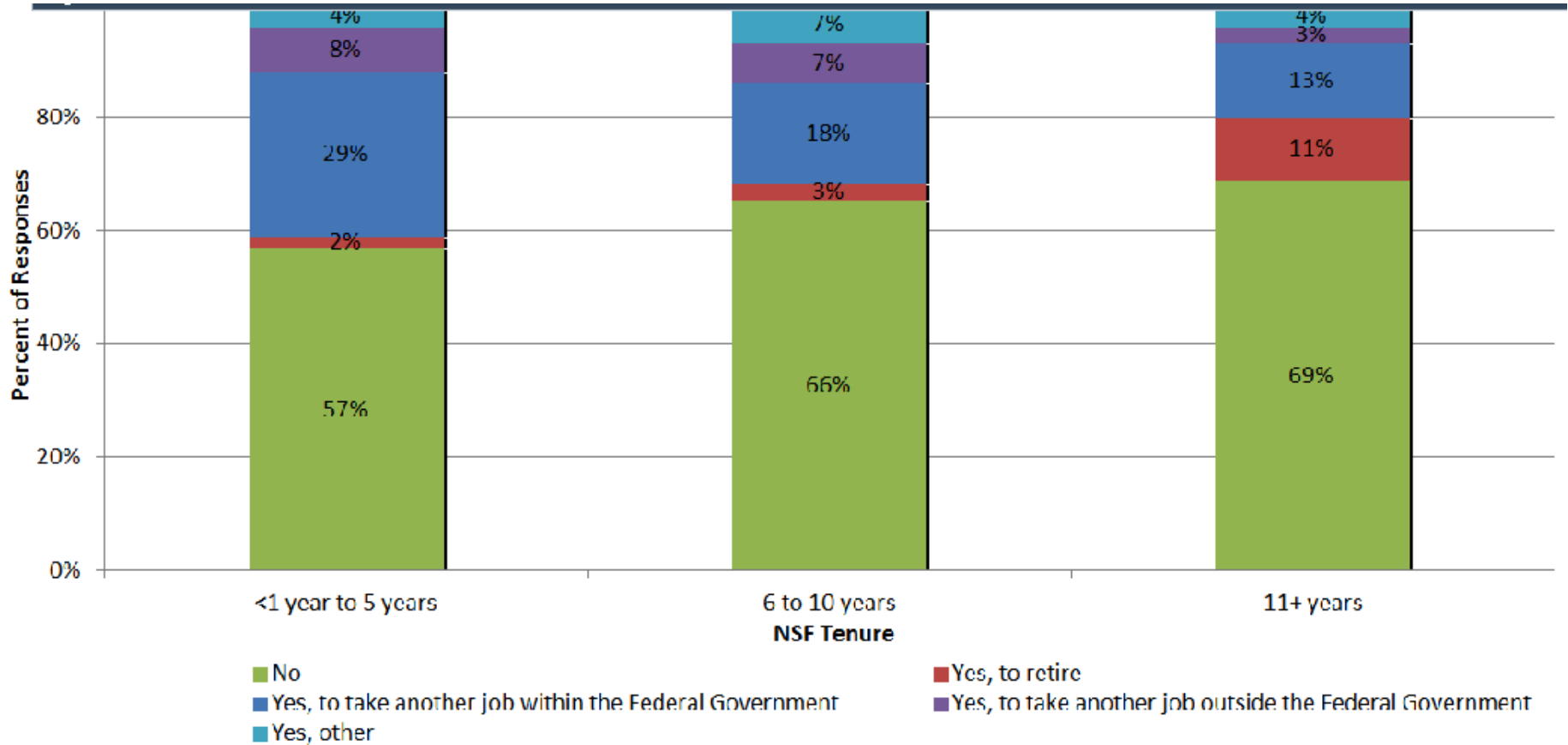


The business operations job family is the second largest NSF population, representing 34% of the workforce.



Intent to Leave: Not Just for Retirement

2014 Intent to Leave – NSF Tenure (PERM employees only)

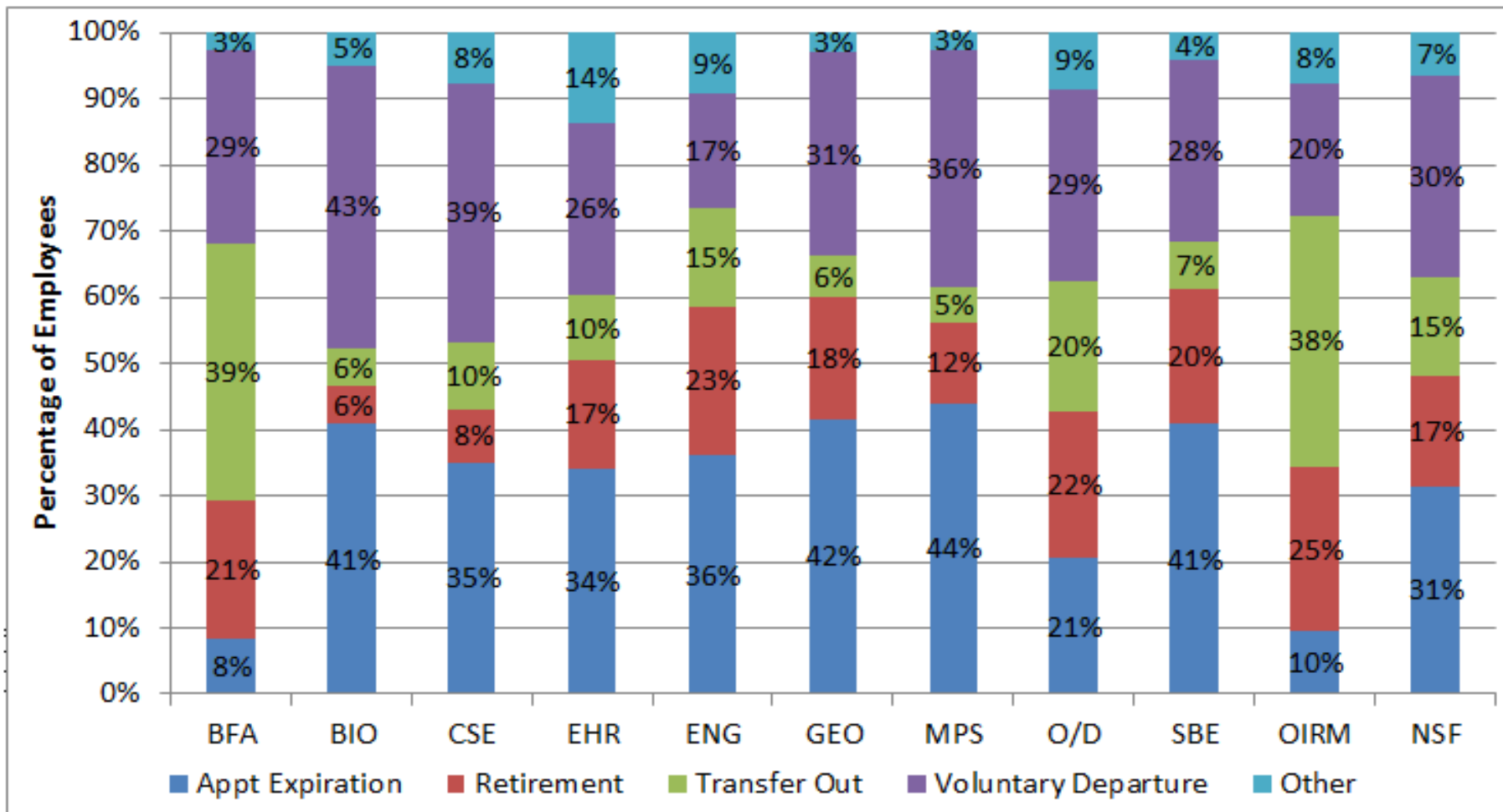


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Losses by Directorate



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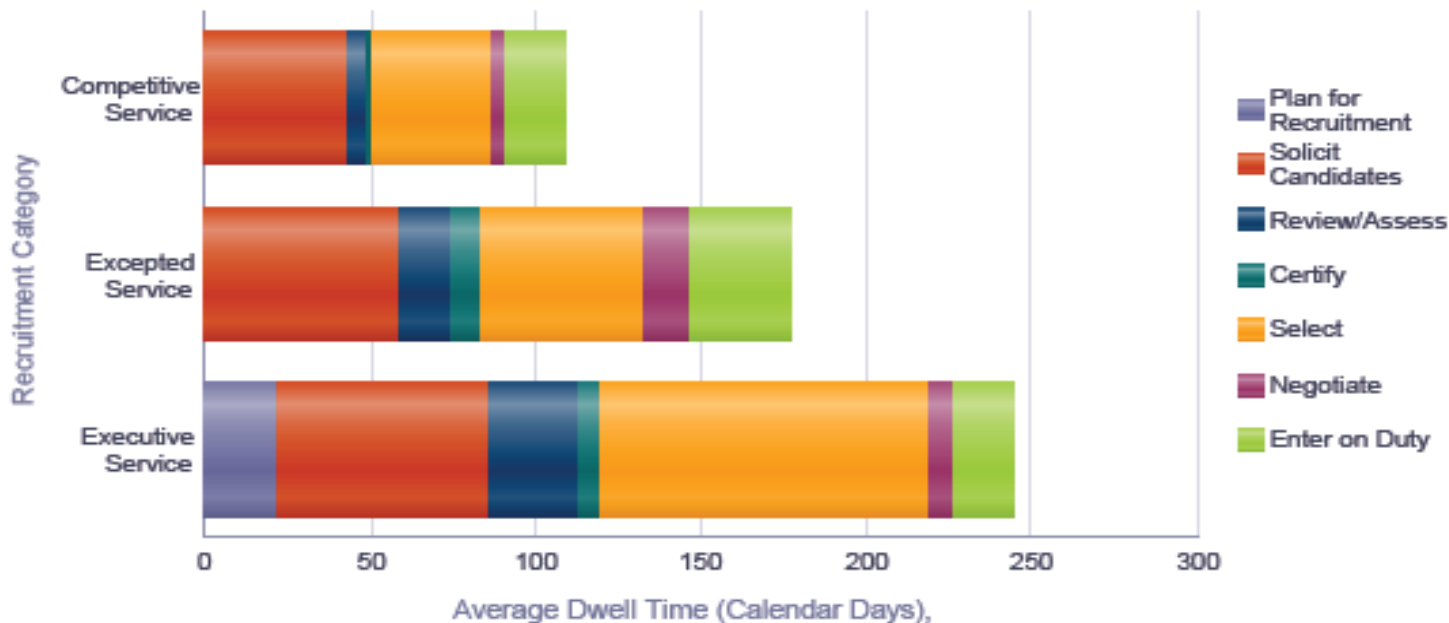


Risk Mitigation & Opportunity Visioning: Actions to Date

- Raise attention through quarterly data presentations for senior managers
 - Data by directorate and division
 - Data by job family
- Incorporate in workforce & succession planning
 - Hiring strategies
 - Retention strategies, including phased retirement, training and development, employee engagement
 - Taking into account how changing work might affect workforce
- On-going discussions of possible strategies with senior management and advisory groups



Hiring Strategies: Recruitment and Selection Efficiencies – Average Dwell Time FY09–13



	Total Actions		
	Competitive Service	Excepted Service	Executive Service
NSF	535	355	61

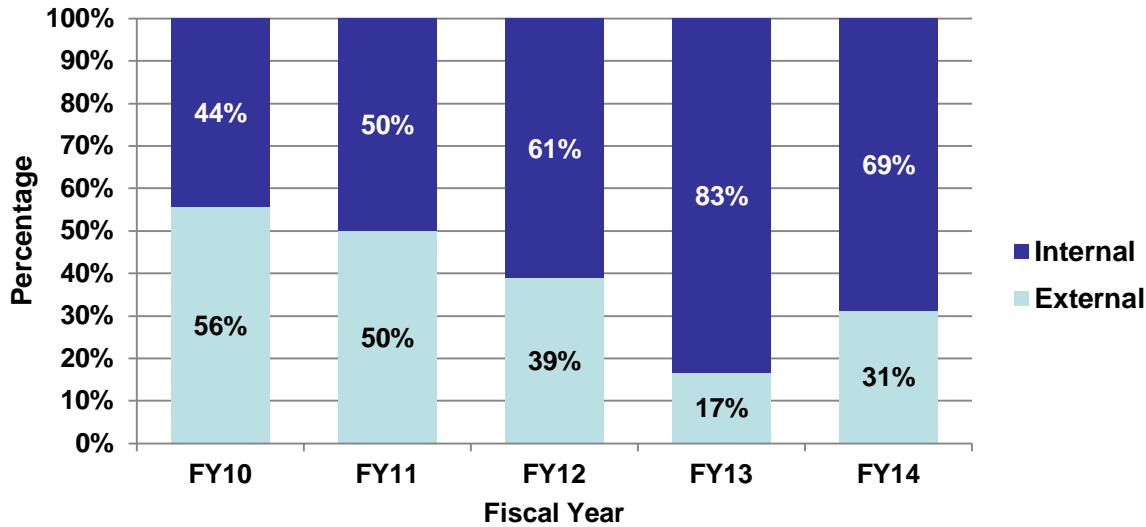
Office of Information and Resource Management
Your Success is Our Success!

Administrative Services
 Human Resource Management
 Information Systems
 Chief Information Officer



What is our hiring pool for SES hires?

SES Hires Internal vs External FY10 -FY14



At end of 2014:

- 24 executive level vacancies
- 35+ active executive recruits

	FY10		FY11		FY12		FY13		FY14	
	Count	%	Count	%	Count	%	Count	%	Count	%
External	5	56%	11	50%	7	39%	1	17%	5	31%
Internal	4	44%	11	50%	11	61%	5	83%	11	69%
Internal - Other	4	44%	10	45%	9	50%	3	50%	7	44%
Internal - SES		0%	1	5%	2	11%	2	33%	4	25%
Total	9	100%	22	100%	18	100%	6	100%	16	100%

Includes Conversions and New Appointments into the ES Pay Plan.
IPA's are not included.



Typical Approaches to Succession Planning

- Aimed at continuity of leadership/ operations
- Viewed as management tool
 - Sometimes with stated criteria for decisions
- If individual left, who would take place
 - Temporarily
 - Longer term
- Usually from one layer down in the hierarchy
- Build candidate pool through professional development
 - Formal or informal programs
- Going outside is seldom the first approach



Elements in NSF Environment Impact Succession Planning

- Reliance on rotator program
 - Promotes succession planning through
 - “Not to Exceed” (NTE) date triggers action, usually well in advance
 - Challenges standard succession planning
 - Absence of NTE date for permanent staff
 - Planned, periodic disruption in staff and leadership
- Very flat organization
- Government recruiting processes, requirements, particularly at executive level



Questions for Discussion

- How might NSF **adapt standard approaches** to succession planning or **create new approaches** that take advantage of the dynamism of the NSF workforce, including its rotator population?
- Are there approaches to succession planning inside or outside the federal government that **meld the dual needs of continuity and disruption**?
- What strategies other than formal succession planning might help us to **create opportunities for advancement of our staff** leading to NSF retaining experienced staff through the relocation?

Backgrounder: Fall 2014
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Assist with Managing Change at NSF

Presentation:

The agenda for this meeting includes items on iTRAK, the NSF relocation and succession planning---all items that have significant change management components associated with them. Committee discussants with experience in the change management arena and/or who have dealt recently with change management challenges will share their learnings and experiences with NSF.

Committee Action/Feedback:

Goal is to help NSF more effectively deal with change management issues, recognizing that these issues are common across many organizations. Are there best practices or tools that can be used at NSF?

Contact Person: Jeff Rich, 703-292-4227, jrich@nsf.gov

Background: Fall 2014
NSF Advisory Committee for Business and Operations

Nature of Agenda Item: Feedback on the Strategic Review Process

Presentation:

In the spring of 2014 NSF designed and conducted the first round of Strategic Reviews in response to the requirement of the Government Performance and Results Act (GPRA) Modernization Act of 2010. OMB Circular A-11(270.2) specifically requires that these reviews, which are designed to assess progress on an agency's strategic objectives set forth in the agency's strategic plan, should inform strategic decision-making, budget formulation, and near-term agency actions, as well as preparation of the Annual Performance Plan and Annual Performance Report.

Although the Strategic Reviews are a GPRA requirement, OMB gave agencies the flexibility to implement the reviews in a way that is useful for their own purposes. The Strategic Review Process that we developed provides an opportunity to use data and evidence to inform planning, decision making, and improvement. OMB was impressed with NSF's approach and is pointing to our process as a model for other agencies. Key to our success is the fact that we carefully and strategically chose questions that are important to NSF senior management. The engagement of senior leaders as active participants helped to target the questions in a way that informs decision-making. OMB appreciated the focus on opportunities for improvement and there do not appear to be negative consequences to divulging challenges uncovered in the reviews.

This presentation will provide an overview of the FY 2014 process highlighting specific aspects that made the process successful. Examples of how the reviews will be used to effect change at the agency will be discussed. The next round of Strategic Reviews will begin in earnest in January of 2015. We are currently preparing for the reviews by engaging senior leaders in discussions of strategic directions and topics for the reviews. The Advisory Committees advice will help us improve the process as we move forward.

Committee Action/Feedback:

NSF is enthusiastic about the potential for Strategic Reviews to help us effect meaningful change within the agency. However, we recognize that any new process is fragile at conception. As we begin the second round of strategic reviews, we seek the AC's advice on how to institutionalize the process and make it more robust. Although it is tempting to be satisfied with our early successes, if we do not anticipate possible sources of resistance at this critical stage, those successes could be short-lived. We seek the committees input on how to minimize and manage resistance to change so that we can maintain momentum and continue to improve.

Contact Person: Pam O'Neil, 703-292-7403, poneil@nsf.gov.

Case Study

NSF



Pam O'Neil (Deputy PIO) and JD Kundu (OMB examiner)

What did you hope to see as the outcome of the collaboration between your agency and OMB?

Pam: "I wanted NSF to become a little bit more evidence based in its decision making and saw the Strategic Review as a way to do that. One of the things JD did was to be clear that he was looking for options for action or improvement – this was really helpful to us and became a key part of the discussion at our senior management round table and within the Agency."

JD: "The core of NSF's mission is promotion of basic research where it is –by definition– difficult to see what the outcome will be. I wanted to see if NSF could nonetheless come up with meaningful ways to improve performance."

How did you effectively communicate about the Strategic Review in NSF – avoid it being seen as 'just another OMB requirement'?

Pam: "It was incredibly challenging, especially with senior leaders who were very concerned about workload. So our first conversations were about how to do this without creating more work. Our approach was to have individual meetings with all the senior leaders, and pepper our presentations with questions that we knew would intrigue them; we gave them the opportunity to choose what questions were most important for the Agency to answer. And we talked about how results would be used with OMB – for budget formulation – which was motivating in itself. We barely mentioned categorization, which was helpful. The definition of success was that we come up with action for improvement. But the prime motivator was the curiosity of our senior leaders to answer these important and interesting questions."

SR process has multiple customers – what did the OMB team find most useful in the document? What are your expectations of the next round?

JD: "Most important thing was that it identified clear next steps/follow on actions – over the next several months we will have a conversation about what we're going to do to move forward. Some things might get left behind but we will come back to them next year. NSF is organized by research

programs in specific disciplines, but the Agency Goals are cross-cutting. The Strategic Review process was an opportunity to pick up cross-cutting issues and think about what NSF could do to add collective benefit to multiple programs."

Pam: "To give some examples of the type of next steps we submitted – some were short-term and focused on the next Budget cycle, but some were also upstream (e.g. a workshop to think more about the issue). The aim was to focus on what would be useful to us to improve mission delivery."

How did NSF and OMB engage early in the process?

Pam: "We had a fairly informal phone conference with JD after we submitted our proposed process and asked him what he wanted. We took his guidance very seriously and it became part of our communication plan with the agency - 'this is what OMB wants to see'."

JD: "I always felt like NSF's Goals and objectives were very grand, but when we had the call Pam and Marty told me they were going to try to focus on what will move the ball forward. That made sense to me and told me what to expect."

What is OMB going to do with this information?

JD: "The summary of findings is a useful checkpoint. I want to hear from the agency about what is doable. The truth is there have been some issues that have been on my mind where I've been wondering how to get agency leadership to take this issue seriously. The summary of findings provides a useful touchstone document to use in talking to agency leadership and program managers about those issues."

Final thoughts – one key takeaway

Pam: "Lots of people had a lot of fun because we focused on the key analytical questions, which were interesting and important – 'water cooler questions'. The attitude in NSF was great; it was the first time that people have enjoyed working on a GPRA process and volunteered to do it next year. So my advice would be to make the Strategic Review something that works for you."

JD: "The NSF review was candid. Sending a document that makes it look like everything is great damages any Agency's credibility with OMB. No organization is without challenges. Spelling it out and putting it out there is very helpful."



STRATEGIC REVIEW PROCESS

A MECHANISM TO EMPOWER THE AGENCY TO EFFECT CHANGE

DECEMBER, 11, 2014

PAM O'NEIL, PH.D.
DEPUTY PERFORMANCE IMPROVEMENT OFFICER



STRATEGIC REVIEW PROCESS:

A NEW PROCESS REQUIRED BY THE GPRA MODERNIZATION ACT BY WHICH FEDERAL AGENCIES WILL ANNUALLY ASSESS PERFORMANCE ON THE STRATEGIC OBJECTIVES IN THE STRATEGIC PLAN TO IDENTIFY AREAS FOR IMPROVEMENT.



Additional detail:

- A process involving the highest level of leadership at the agency that uses evidence to inform planning, decision making, and improvement.
- The process informs strategy and budget formulation, and identifies opportunities for improvement to be reported to OMB.
- Internal stakeholders are the audience for the process.
- Our Budget Examiner at OMB is the audience for the final summary of findings.

HOW IS THIS
DIFFERENT FROM
OTHER GPRA
REQUIREMENTS?



- Agencies were given the flexibility to design a process that serves their needs.
- Emphasis was placed on conversations among senior leaders that use data and information to inform decision making.
- Part of the process is intentionally opaque. This gives us the opportunity to be honest with ourselves.
- The process is linked to the budget planning process but not specifically to resource allocation. There is no downside to reporting challenges.

STRATEGIC GOALS AND OBJECTIVES

Strategic Goal 1 (G1): Transform the Frontiers of Science and Engineering.

- *Strategic Objective 1 (G1/O1): Invest in fundamental research to ensure a continuing stream of advances across NSF science, engineering, and education.*
- *Strategic Objective 2 (G1/O2): Integrate education and research to produce a diverse STEM workforce with cutting-edge capabilities.*
- *Strategic Objective 3 (G1/O3): Provide world-class research infrastructure to enable major scientific advances.*

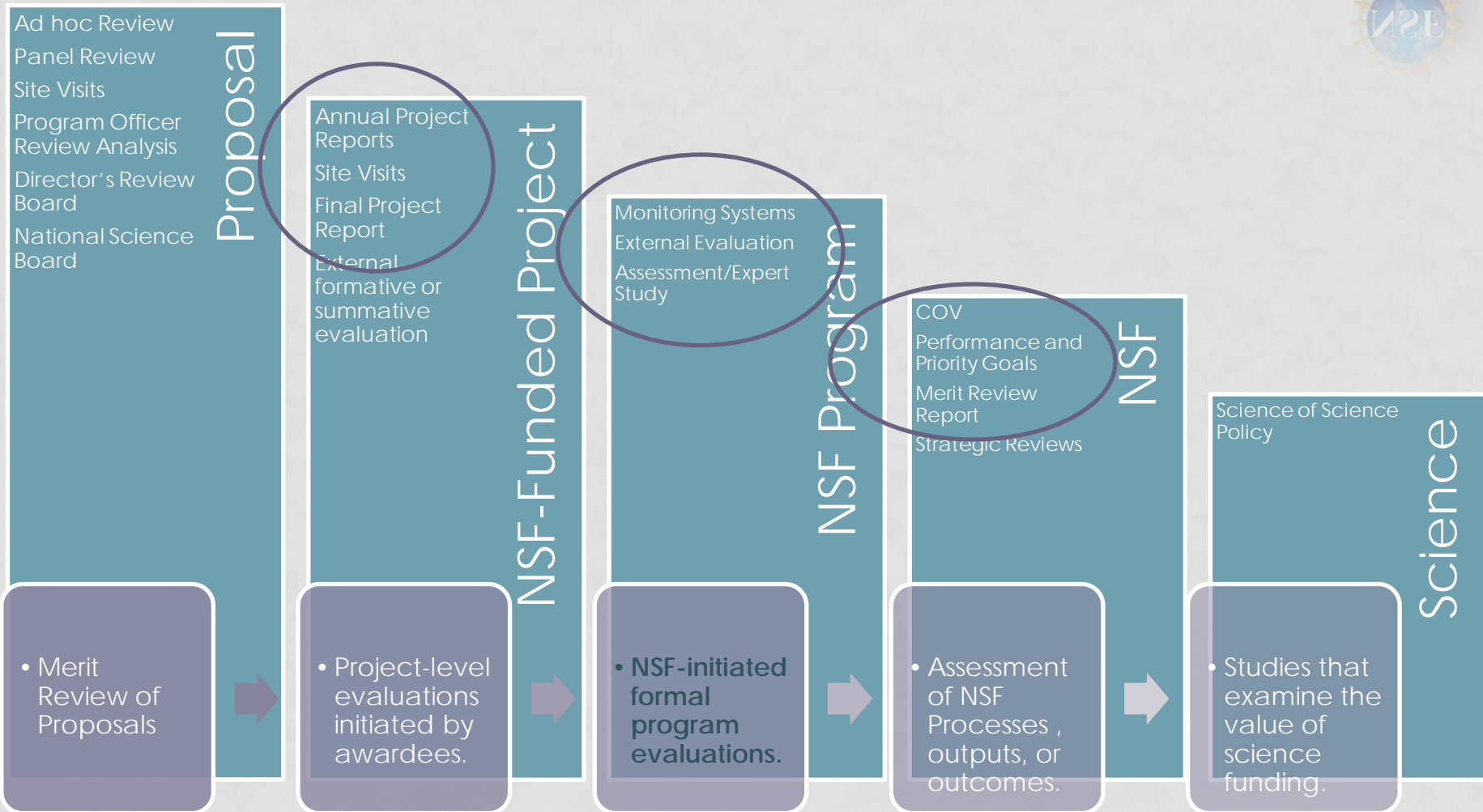
Strategic Goal 2 (G2): Stimulate Innovation and Address Societal Needs through Research and Education.

- *Strategic Objective 1 (G2/O1): Strengthen the links between foundational research and societal needs through investments and partnerships.*
- *Strategic Objective 2 (G2/O2): Build the capacity of the Nation to address societal challenges using a suite of formal, informal, and broadly available STEM educational mechanisms.*

Strategic Goal 3 (G3): Excel as a Scientific Federal Agency.

- *Strategic Objective G3/O1: Build an increasingly diverse, engaged, and high-performing NSF workforce by fostering excellence in recruitment, training, leadership, and management of human capital.*
- *Strategic Objective G3/O2: Use effective business methods and innovative solutions to achieve excellence in accomplishing the agency's mission.*

NSF STRATEGIC REVIEWS ANALYZE THE RESULTS OF NUMEROUS ASSESSMENT MECHANISMS



STRATEGIC OBJECTIVE: STRENGTHEN THE LINKS BETWEEN FOUNDATIONAL RESEARCH AND SOCIETAL NEEDS THROUGH INVESTMENTS AND PARTNERSHIPS.

KEY ANALYTICAL QUESTIONS:

Focus: Linking knowledge and practice

What is the current conventional wisdom for knowledge transfer? (what are other agencies, universities, the private sector doing?)

What are the various models, tools, and mechanisms available within NSF? How are they tuned to past and current societal needs?

What does NSF need to do to adapt new ways of linking knowledge and practice? What are the gaps in what is needed and what we are currently doing?

*Stimulate innovation
and address societal
needs through research
and education*



STRENGTHEN THE LINKS
BETWEEN FOUNDATIONAL
RESEARCH AND SOCIETAL
NEEDS THROUGH
INVESTMENTS AND
PARTNERSHIPS.

The review investigated the current conventional wisdom for knowledge transfer, various mechanisms available within NSF to support knowledge transfer, and identified gaps between what is needed and what we are currently doing.

Opportunity for Action:

Expand efforts on targeted education to cultivate industry-relevant skills and the mentality for technology commercialization among students. Convene a workshop to brainstorm how to further grow innovative thinking and entrepreneurship (building on NSF I-Corps successes), and what new models of education are emerging or will be appropriate.

Noteworthy
Progress

STRATEGIC OBJECTIVE G3/O2: USE EFFECTIVE BUSINESS METHODS AND INNOVATIVE SOLUTIONS TO ACHIEVE EXCELLENCE IN ACCOMPLISHING THE AGENCY'S MISSION.

What can organizational theory tell us about the strengths and weaknesses of NSF structure and culture?

Is there evidence that our *culture* results in efficiency or inefficiency?

What is the NSF management model and how does it affect our ability to use effective business methods and innovative solutions to achieve excellence in accomplishing the Agency's mission?

What can we learn from similar organizations that achieve organizational excellence?



*Excel as a
Scientific
Federal Agency.*



USE EFFECTIVE BUSINESS
METHODS AND
INNOVATIVE SOLUTIONS
TO ACHIEVE EXCELLENCE
IN ACCOMPLISHING THE
AGENCY'S MISSION.

The strategic review used organizational theory to gain an understanding of the strengths and weaknesses of NSF's structure and culture.

Prioritized
for FY
2015

Conclusions and Opportunities for Action:

- At NSF there are two predominant cultures: one that is academic in nature and one that is business oriented. These two interdependent cultures correlate respectively with the levels of flexibility and control that are manifested in NSF's business model.
- NSF collaborative teams are a predominant organizing mechanism to harness the skills of the two cultures in pursuit of agency goals. Exploring and adopting more structured ways of managing these intra-agency teams and enhancing team skills would improve their efficiency without trading-off effectiveness.
- **Implement a cultural assessment using evidence-based survey tools, with the goal of identifying our organizational strengths and opportunities for improvement.**
- Institutionalize an assessment process with the goal of identifying strategic issues and potential solutions.

WHAT OMB LIKED
ABOUT NSF'S
STRATEGIC
REVIEW PROCESS:



- We asked important questions.
- We involved senior leaders effectively.
- The reviews recommended specific opportunities for improvement.
- Our Summary of Findings was candid.

RESPONSE FROM OMB:

Quotes from our OMB
Examiner JD Kundu at a
Strategic Review Summit
held in July of 2014.



- “The core of NSF’s mission is promotion of basic research where it is –by definition- difficult to see what the outcome will be. I wanted to see if NSF could nonetheless come up with meaningful ways to improve performance.”
- “I always felt like NSF’s strategic goals and objectives were very grand,... Pam and Marty told me they were going to try and focus on what will move the ball forward. That made sense to me and told me what to expect.”

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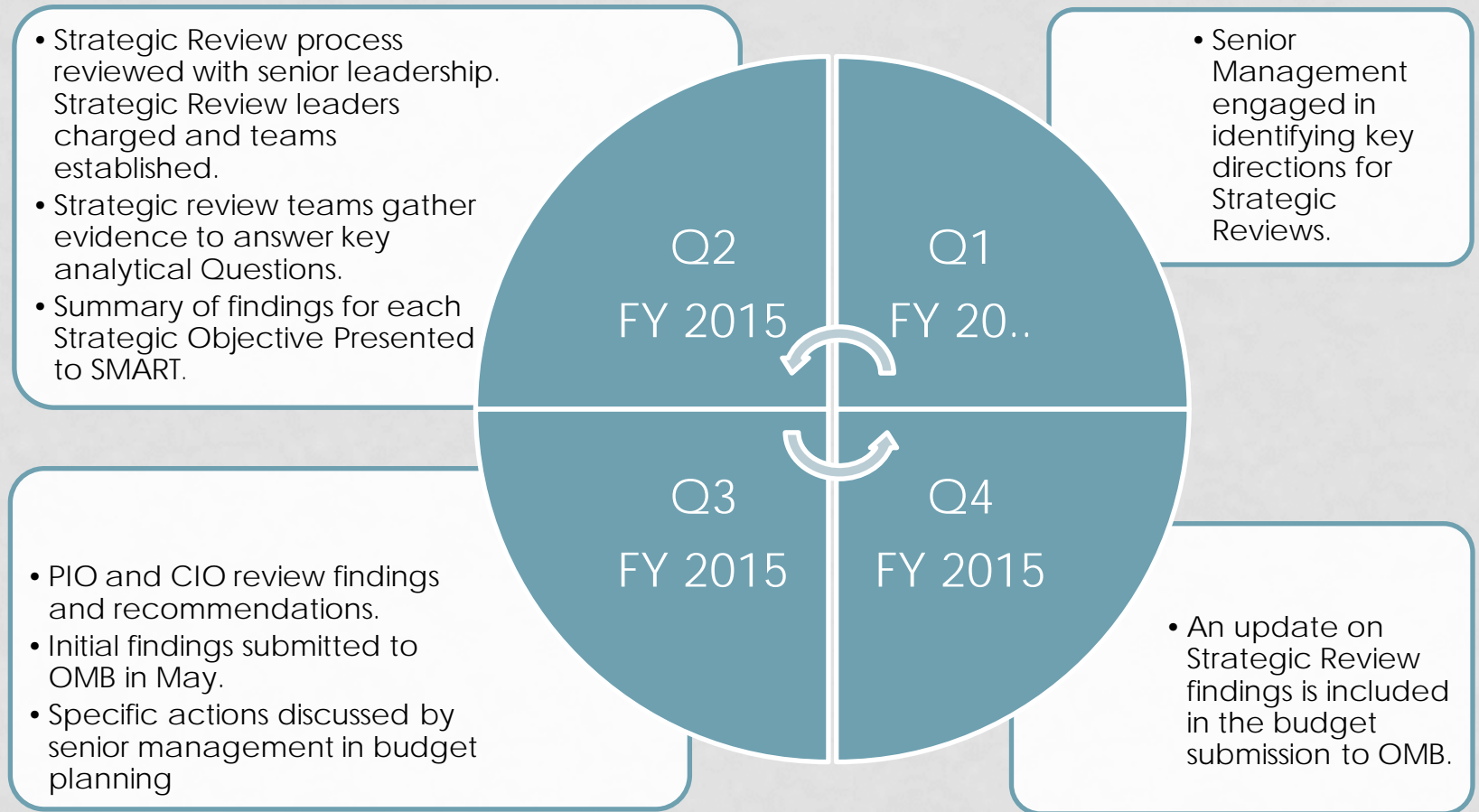
- “The NSF review was candid. Sending a document that makes it look like everything is great damages any Agency’s credibility with OMB. No organization is without challenges. Spelling it out and putting it out there is very helpful”

WHY DO WE SEE
POTENTIAL TO
EFFECT CHANGE?



- Assistant Director engagement in the process.
- Provides structure to budget planning within an annual cycle.
- Encourages data-driven decision making.

PROCESS TIMELINE - ANNUAL CYCLE



Nature of Agenda Item: Risk-Based Management

Presentation:

BFA seeks to implement a risk management approach as a tool to address competing work priorities. Like many governmental organizations, NSF is faced with increased requirements and limited resources, challenging our ability to meet core mission requirements. The agency is compelled to “do less with less” making a risk-based approach to managing organizational priorities an attractive solution.

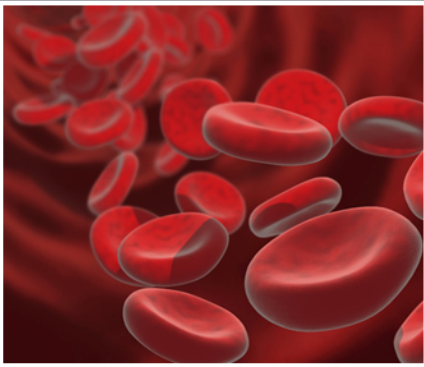
NSF is one of a number of Government organizations turning to the use of Enterprise Risk Management to ensure that it has a consistent and systematic way to address major risks facing the organization, understand the potential impacts of those risks, and can make competent decisions concerning how to apply resources. Some risks may require extra emphasis and resources, while other risk areas may need to be accepted or dealt with less vigorously. Enterprise Risk Management provides a framework within which to address these issues.

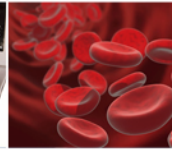
BFA’s interest in applying an Enterprise Risk Management approach to organizational priorities and workload challenges has been a natural progression from previous efforts made to address BFA Strategic Priorities identified during 2011 – 2012 as part of an internal management initiative. “Risk, Costs and Benefits” was one of three major working groups comprising the BFA Strategic Priorities effort. Because this working group issued recommendations regarding potential methods to better manage resources by reconsidering time and effort spent on traditional work areas, the BFA Office Head/CFO has tasked her Senior Staff with exploring a formal Enterprise Risk Management framework.

Committee Action/Feedback

Although BFA is socializing a potential methodology for incorporating an Enterprise Risk Management structure within the organization, many open questions remain. BFA senior managers need to fully understand the value proposition, engaging in BFA’s own “risk/benefits” analysis regarding how a formalized ERM approach will help the organization. As we move to obtain full buy-in from BFA senior managers, the Advisory Committee could help us with some key insights:

- Does your organization have a formal approach for identifying risks, and if so, what process and structures are in place?
- What type of investment (time across different personnel levels, funding) do you think is required to launch and then maintain a risk management process?
- In your experience, do you use dedicated resources to support your risk management approach, or do you distribute the effort across the organization?
- What measures would indicate that a risk management approach is successful?





Agenda

- “Risk Management” and applying the concept within BFA
- Relationship of Risk Management to BFA Strategic Priorities
- Initial approach to Risk Management being pursued by BFA
- How can we improve our approach to Risk Management going forward



Risk Management

- **Risk management** is the identification, assessment, and prioritization of risks...followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.¹
- **Enterprise Risk Management (ERM)** is a discipline that addresses the full spectrum of an organization's risks, including challenges and opportunities, and integrates them into an enterprise-wide, strategically-aligned portfolio view. ERM contributes to improved decision-making and supports the achievement of an organization's mission, goals, and objectives.²
- BFA is faced with increased work requirements and limited resources. We are compelled to “do less with less,” making a risk-based approach to managing priorities an attractive option.

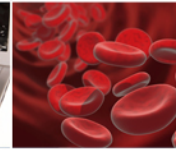
¹ from Wikipedia

² from the Association for Federal Enterprise Risk Management



Risk Management

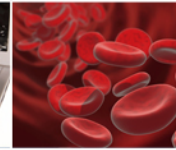
- Enterprise Risk Management has received attention within the Government, and some federal agencies have incorporated ERM Frameworks and designated Chief Risk Officers (CROs)
- OMB has incorporate the consideration of risk management across agency programs (including requirements in the Uniform Guidance)
- OMB has stated that it has not yet determined the need for a CRO or a “one size fits all” approach at federal agencies
- In October 2012, BFA personnel received training in Enterprise Risk Management



Risk Management

Significant Points from Oct 2012 Training:

- Considering increasing requirements and limited resources, ability to meet core mission requirements is being challenged
 - Shift towards “Doing less with less”
 - Risk-based approach will become necessary
- Effective Risk Management helps to move us from Reactive Change to Proactive Change
- Also helps us to make conscious decisions concerning Risks we are willing to accept



Risk Management

Significant Points from Oct 2012 Training (Cont):

- Ultimately, organizations must balance Benefits, Costs, and Risks to Maximize Value
- All organizations consider risk to some degree – However, is it
 - Systematic
 - Strategic
 - A contributor to value maximization
 - An explicit part of the decision-making process
- Risk management is not about eliminating or even minimizing risk; it is about understanding risk to intelligently take advantage of opportunities in a balanced way that maximizes value



Risk Management

Significant Points from Oct 2012 Training:

Core Pieces of the ERM Process:

- Establish Context (Organizational Environment)
- Identify and Evaluate Risks
- Treat Risks
- Monitor and Review
- Communicate and Consult (Continuous and from start to finish)



Risk Management

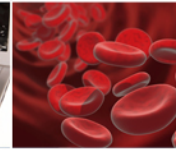
(Excerpt from NASA Example in Background Slides)

RECOMMENDATION	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
	Inherent Risk (1-25)	Residual/Composite Risk Index (1-25)	Risk Change (1-24) <i>(Col. 1 minus Col 2)</i>	Life Cycle Cost (1-5) <i>(Estimated.)</i>	Life Cycle ROI (1-25) <i>(Col. 3 over Col 4)</i>	Life Cycle Cost Priority	Initial Cost (1-5) <i>(Estimated.)</i>	Initial Cost ROI (1-25) <i>(Col. 3 over Col 7)</i>	Initial Cost Priority
SAMPLE CALCULATION	16	4	12	1	12	4	2	6	5
Etc.									



Relationship to BFA Strategic Priorities

- Jan. 2012 – “BFA Summer Study” released, identifying areas for potential improvement based on staff input
- June 2012 – “Strategic Priorities Initiative” begins, focusing on 3 core areas (risks/benefits, duplicate functions, and professional development “SWAT” team)
- June 2013 – “Final Report of Strategic Priorities Group” released – Includes recommendations to implement an ERM program within BFA



Relationship to BFA Strategic Priorities

Excerpts from Strategic Priorities Report Recommendations:

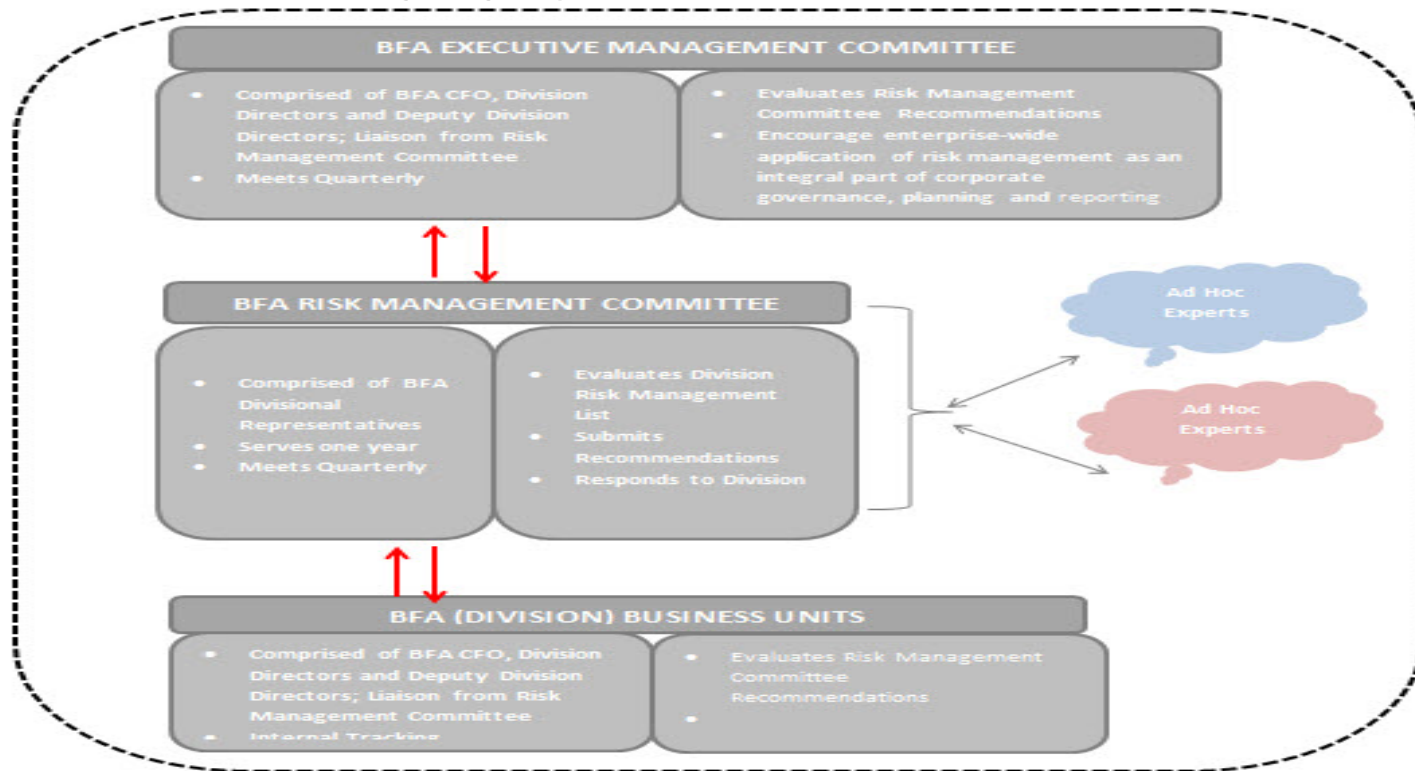
Risk, Cost and Benefits:

- Implement the BFA ERM Framework by first identifying a BFA Front Office owner
- Help BFA Divisions incorporate systematic processes for assessing risk and/or cost and benefit techniques into their daily decision making
- Designate a BFA-wide Lead to coordinate a risk analysis of the BFA-wide portfolio oversight efforts



Relationship to BFA Strategic Priorities

Excerpt from Strategic Priorities Report
Recommendations on a notional ERM
Framework:

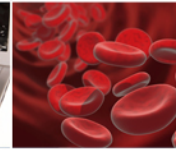




Initial Approach

Initial Streamlined Approach to ERM

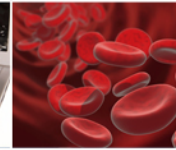
- During August – September 2014, BFA had developed a list of “Organizational Priorities” to discuss with incoming Chief Operating Officer
- Organizational Priorities List: *“Senior BFA leadership identified the following areas as current management priorities being addressed by BFA that are pivotal to NSF’s ability to accomplish its strategic goal to excel as a federal science agency. [These are not in priority order.]”*



Initial Approach

Initial Streamlined Approach to ERM

- Use Organizational Priorities and other recently developed materials to identify initial list of major risks
- Discuss risks that should be added or deleted
- In the context of the major tenets of Enterprise Risk Management:
 - Discuss each risk
 - Discuss risk priorities, and current plans to address risks
- Improve the process going forward



Improvements Going Forward

- Does your organization have a formal approach for identifying risks, and if so what process and structure are in place?
- What type of investment (time across different personnel levels, funding) do you think is required to launch and then maintain a risk management process?
- In your experience, do you use dedicated resources to support your risk management approach, or do you distribute the effort across the organization?
- What measures would indicate that a risk management approach is successful?



WHERE DISCOVERIES BEGIN



Background Slides



WHERE DISCOVERIES BEGIN



Example of Enterprise Risk Management Application (NASA)



RISK-BASED PRIORITIZATION OF RECOMMENDATIONS

Overview

NASA's stated goal for this review was to "enhance its Foreign National Access Management in the areas of Mission Strategy and Priorities; Quality and Relevance; and Effectiveness and Efficiency of Management." The Review was to include elements with multiple organizational inputs, and was to focus on performance, as well as providing a risk-based prioritization of observations and recommendations for future enhancements.

As noted, the Academy study team visited NASA HQ and five Centers, evaluated relevant policy and procedural documents, interviewed in excess of one hundred NASA employees and contractors involved in the FNAM process, contacted other federal agencies and non-governmental organizations with experience and expertise in FNAM-related issues, and reviewed internal Agency documents pertaining to organizational performance and incident response.

As requested by NASA, the following sections address the risk-based prioritization of the Panel's twenty-seven Findings and Recommendations. The Risk Management methodology utilized in the process will be explained, followed by prioritization and rationale for the recommendations categorized in two distinct ways: those that have the best long-term Return on Investment ("Life Cycle cost") and those that have the best Return on Investment within a single budget year ("Short term budget considerations").

Methodology

NASA possesses an unparalleled expertise in identifying and assessing threats to projects and programs, determining the risk, identifying ways to reduce those risks, and prioritizing risk reduction measures based on a strategy. The Panel has sought to provide a risk-based prioritization of the recommendations to enhance NASA programs and processes relevant to Foreign National Access Management. As noted above, the Panel concluded that it might be helpful to the Agency to provide recommendations based upon projected long-term ROI, as well as potential adjustments to priorities based on investment costs and a need to prioritize within existing fiscal constraints.



The Panel used the Composite Risk Index process to determine the priorities. This process involves assigning a numerical value from 1 to 5, to both the *impact/consequence* of a risk event as well as the *probability* of the event occurring, with the higher the number reflecting greater significance. The two designated numbers – probability and consequence - are then multiplied, and the total – up to 25 – reflects the degree of risk.

Two Risk Maps were created, with the numbers in the map cells corresponding to the Panel’s recommendations. The *Current Risk Map* (Figure 4.3) denotes the Panel’s subjective assessment of the current risk associated with each of the twenty-seven recommendations, based upon an educated evaluation of the probability and consequence of each. The *Projected Risk Map* (Figure 4.3) reflects the projected impact on risk should the recommendations be implemented by NASA.

The totals resulting from the multiplication of the numbers assigned to probability and consequence from the Current Risk Map are listed on the Risk Management Assessment (RMA) Table (Table 4.1) in Column 1 as “Inherent Risk.” The totals resulting from the multiplication of the numbers assigned to probability and consequence from the Projected Risk Map are listed on the RMA Table in Column 2 as “Residual Risk,” the level of risk estimated to remain following successful implementation of a recommendation.

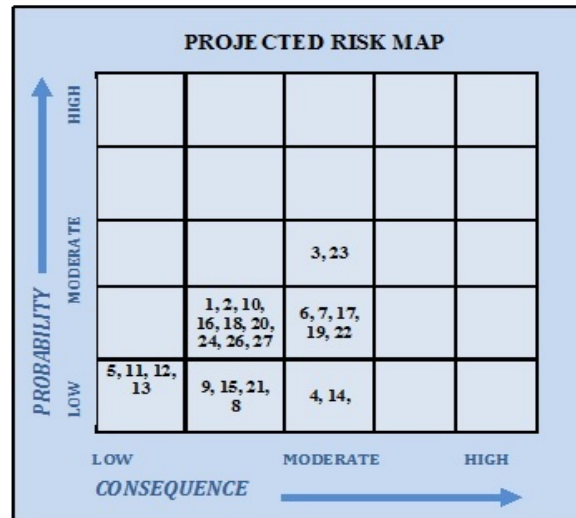
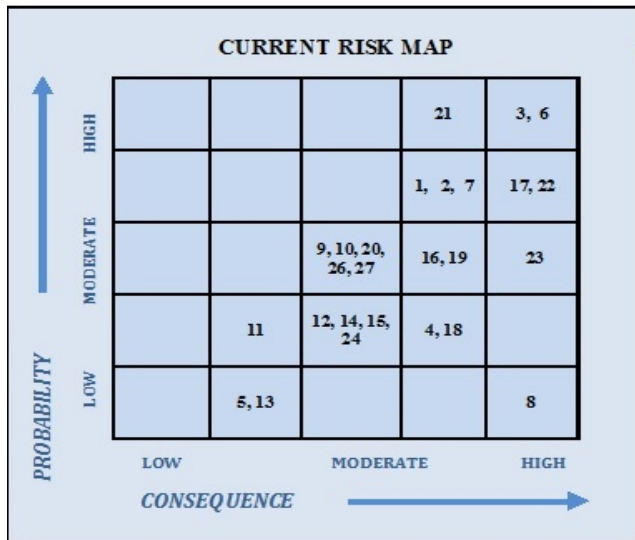
Prioritization of study recommendations are based on the return on investment (ROI) of the individual recommendations. This ROI can be subjectively determined by comparing the relative reduction of risk, as reflected in the decrease from inherent risk to residual risk captured in Column 3 of the RMA Table for each recommendation, compared to the relative cost needed to affect such a reduction in risk. Ideally, the costs and benefits used to calculate a relative ROI should be over the long-term, comparing long-term benefits in risk reduction with long-terms costs, including cost savings from improved efficiencies and reduced redundancies. This analysis and associated prioritization is accomplished by dividing the relative risk reduction in Column 3 by the relative long-term cost, indicated by “Life Cycle Cost”, in Column 4. The quotient shown in Column 5 is the relative long-term ROI. Column 6 (highlighted) lists the priority for implementing each recommendation based on its long-term ROI.

This study recognizes, however, that budget constraints may limit options in implementing recommendations based solely on long-term, or lifecycle, ROI. This study has thus also considered initial investment costs in suggesting possible priorities in light of any such costs and associated budget limitations. An adjusted ROI taking only estimated initial costs (i.e., ignoring potential long-term cost savings) is reflected in columns 7-9. This analysis and associated prioritization is accomplished by dividing the relative risk reduction in Column 3 by the Initial Costs in Column 7. The quotient shown in Column 8 is the Initial Costs ROI. Column 9 (highlighted) lists the priority for implementing each recommendation based on its Initial Costs ROI.



Whether prioritization is based on long-term ROI or short term ROI, it should be kept in mind that the following analysis is intended for prioritization purposes only. Both the numerator of the ROI (benefits) and the denominator (costs) are subjective assessments and cannot be used to confirm a positive payback on investment in terms of dollars. It is also recognized that different individuals with different experiences and insights may estimate the probability and consequences of a risk, as well as the cost to reduce that risk, differently.

While the methodology utilized in assessing, evaluating, and prioritizing risk pertaining to the identified recommendations is subjective, information contained in the RMA Table and related Risk charts provides the basis for legitimate discussions on how NASA can best achieve its stated objective – enhancement of the FNAM-related programs and processes. The collective data on the Table and charts provides the tools to identify, assess, and prioritize the recommendations in a number of different ways.

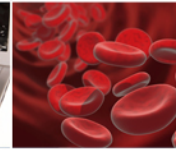




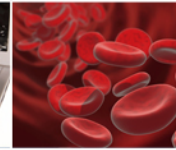
RECOMMENDATION	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9
	Inherent Risk (1-25)	Residual/ Composite Risk Index (1-25)	Risk Change (1-24) (Col. 1 minus Col 2)	Life Cycle Cost (1-5) (Estimated.)	Life Cycle ROI (1-25) (Col. 3 over Col 4)	Life Cycle Cost Priority	Initial Cost (1-5) (Estimated.)	Initial Cost ROI (1-25) (Col. 3 over Col 7)	Initial Cost Priority
SAMPLE CALCULATION	16	4	12	1	12	4	2	6	5
Etc.									



WHERE DISCOVERIES BEGIN



BFA Significant Risks (From Organizational Priorities List)



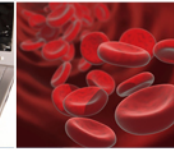
Significant Risks (from Organizational Priorities List)

- Implementing Systemic, Risk-based Monitoring in a Modernized Environment
- Implementing Legislation & NSB Recommendations to Reduce Administrative Burden on PIs & Awardees
- Implementing Improved Processes relating to Facilities Oversight
- Creating Clarity & Consistency of Policy, Process and Procedures related to Large Facilities
- Developing an Internal Coordination Strategy for Large Facilities Oversight and Assurance



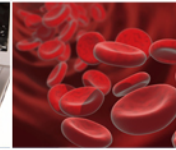
Significant Risks (from Organizational Priorities List)

- Performance Improvement Officer (PIO) Function/Strategic Reviews – Make the Strategic Review Process a meaningful part of the fabric of the agency
- Implementing iTRAK & Successfully Integrating it into NSF business culture
- Resolving Issues Impacting the Financial Statement Audit
- Optimizing the Award Process to Level Workload
- Migrating to a New Award System to Modernize Grant Management



Significant Risks (from Organizational Priorities List)

- Planning Effectively for Emerging Human Resource Challenges
 - Retirements/Retention
 - Impact of Systems/Process Modernizations
 - BFA Strategic Priorities
- President's Management Agenda
 - Acquisition
 - Financial Management



Significant Risks (Potential Other)

From Initial List of Organizational Priorities/OMB Briefing/Other:

- Clarifying the role of the NSF Audit Follow-up Official (AFO)
- Applying Risk Based Approaches to Workload Management based on Resource Constraints
- Grant Accruals
- Strategic Objectives Review
- Questions on use of contracts versus financial assistance for large facility awards
- Impact of potential issues associated with Future NSF
- Unfunded Termination Liability
- *Others?*