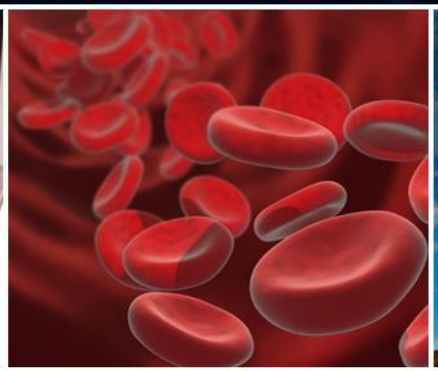
National Science Foundation Update

NCURA Region IV/V

Section Meeting

April 15-18th, 2012



Ask Early, Ask Often

- **Beth Strausser**
  - Senior Policy Specialist, Policy Office
  - Division of Institution & Award Support
  - Office of Budget, Finance & Award Management
  - bstrauss@nsf.gov; (703) 292-4574
  - Email general policy questions to: policy@nsf.gov

Topics Covered

- Personnel Update
- NSF Budget in the Federal Context
- NSF Fiscal Year 2013 Budget Request
- ARRA Acceleration
- Merit Review:
  - Merit Review Process Working Group
  - Merit Review Criteria Working Group
- Research.gov Update
- Award Terms and Conditions Update
- Cost Sharing Update
- Research Performance Progress Report

Personnel Update

- Mr. Eugene Hubbard appointed Head, Office of Information & Resource Management and Chief Human Capital Officer January 8, 2012
- Ms. Amy Northcutt appointed Chief Information Officer January 8, 2012
- Ms. Judith Gan appointed Head, Office of Legislative & Public Affairs January 15, 2012
- Dr. Karl Erb, Head, Office of Polar Programs (OPP) to retire March 31, 2012
- Dr. Kelly Falkner will be Acting Head, OPP as of April 1, 2012

FY 2013 Budget Request

- $7.373 billion
- Consistent with Administration's commitment to doubling NSF and basic research agencies
- Emphasizes ways that fundamental research contributes to addressing national challenges

FY 2013 Budget Request

National Science Foundation
Funding by Account

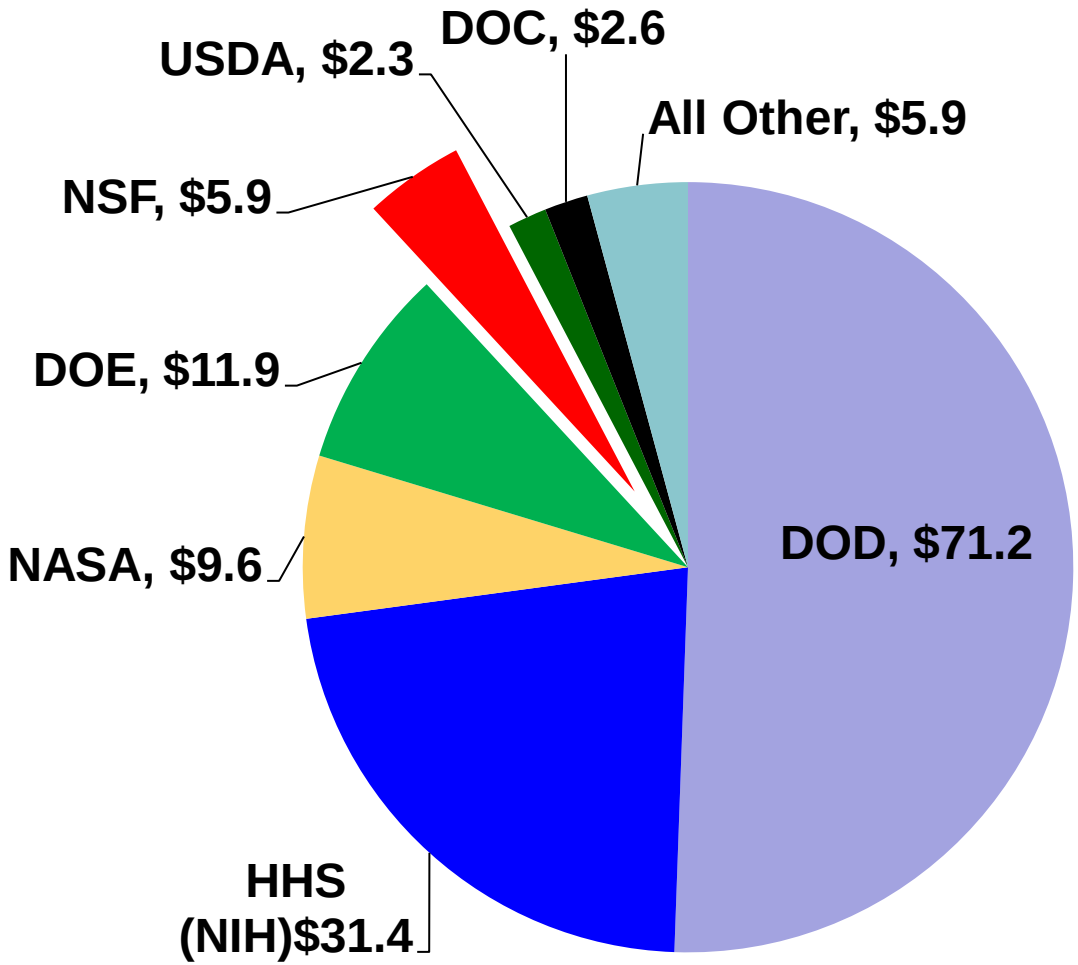
(Dollars in Millions)

	FY 2012 Enacted	FY 2013 Request	Change Over FY 2012 Enacted Amount	Change Over FY 2012 Enacted Percent
Research & Related Activities	$5,689	$5,983	$294	5.2%
Education & Human Resources	829	876	47	5.6%
Major Research Equipment & Facilities Construction	197	196	-1	-0.4%
Agency Operations & Award Management	299	299	-	-
National Science Board	4	4	-	-
Office of Inspector General	14	14	-	-
Total, NSF	**$7,033**	**$7,373**	**$340**	**4.8%**

Totals may not add due to rounding.

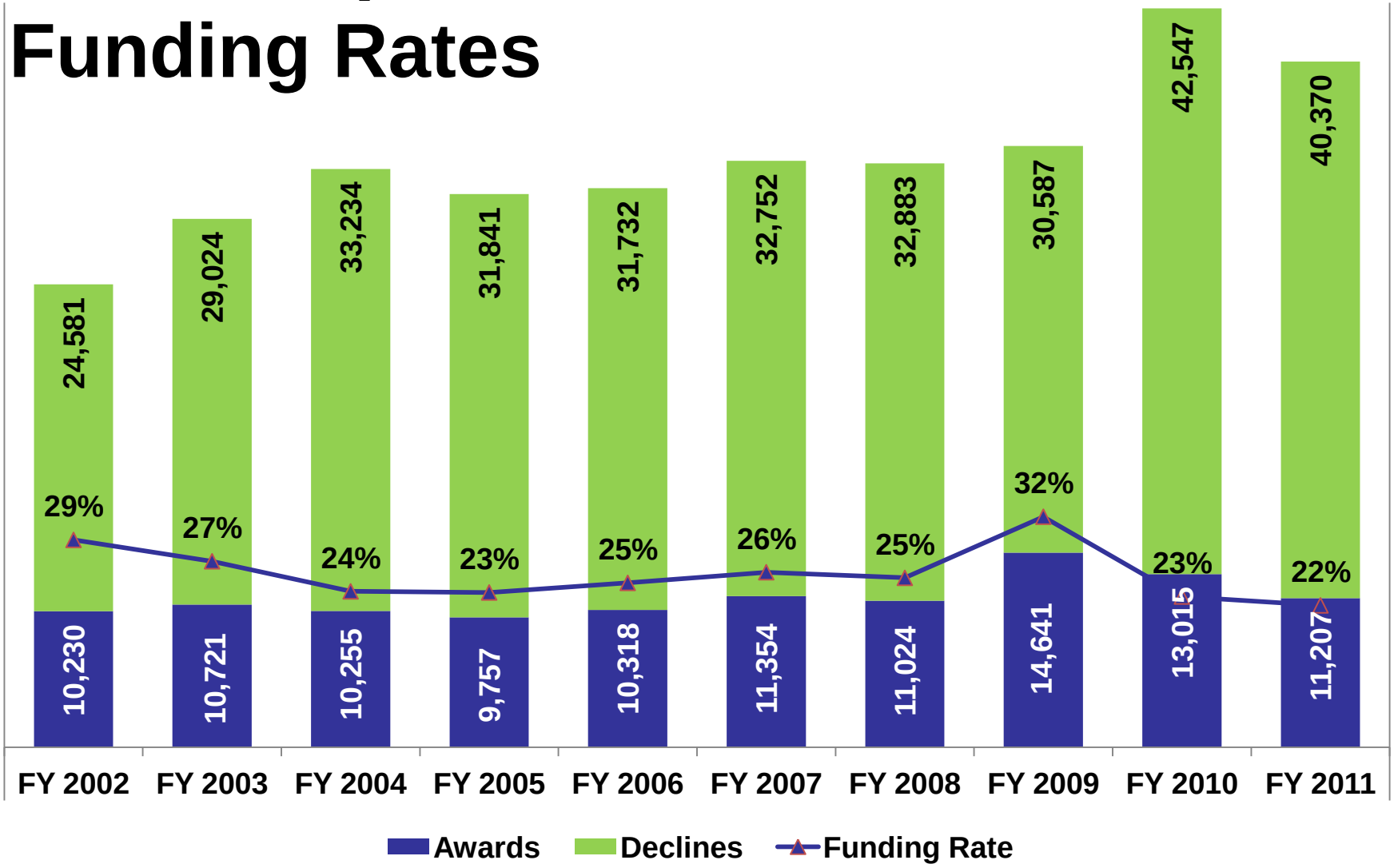
FY 2013 Request: Total R&D by Agency

Budget Authority in Billions of Dollars

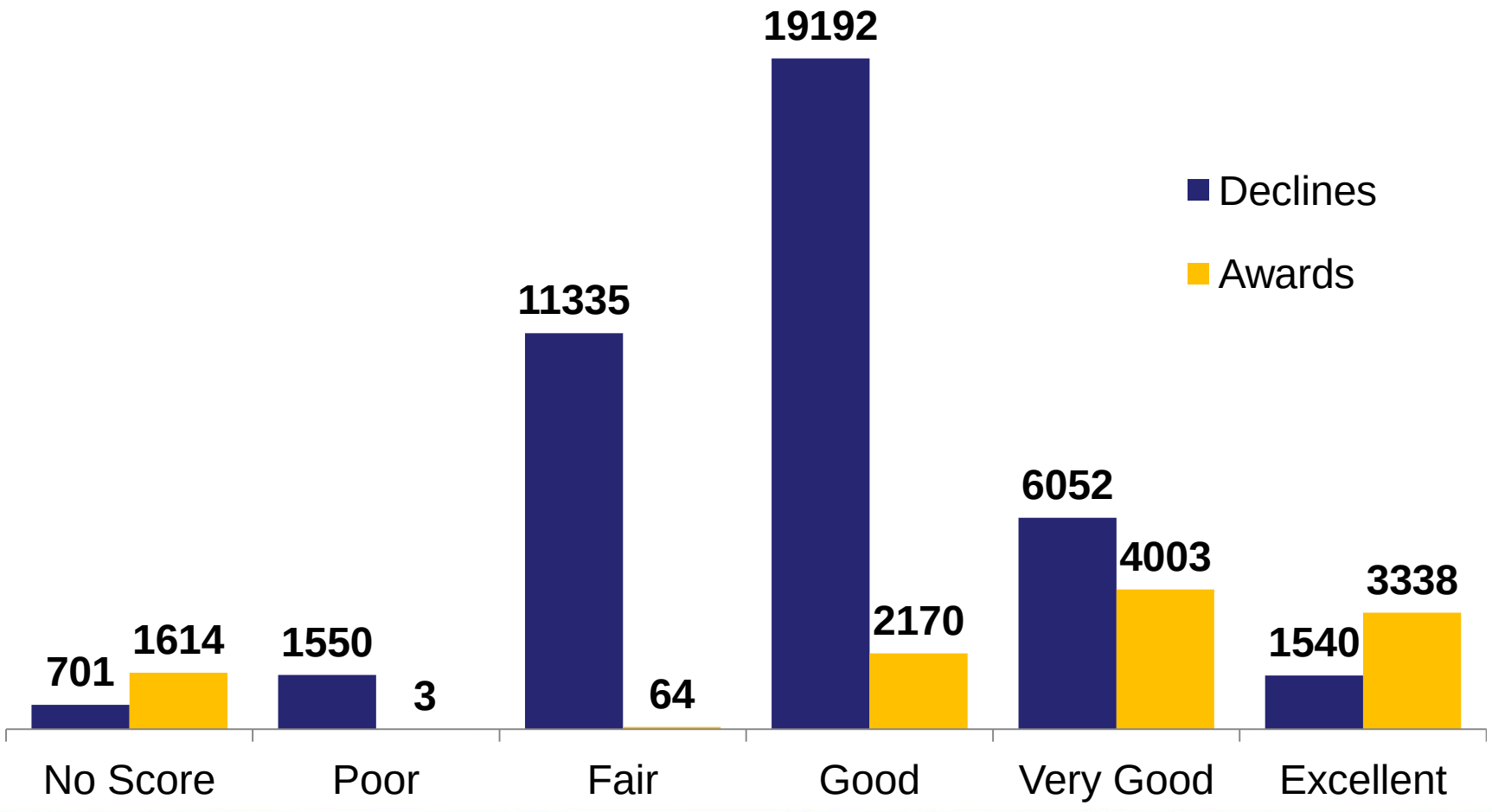


Total R&D = $140.8 billion

NSF Competitive Awards, Declines & Funding Rates



Distribution by Average Reviewer Ratings for Awards and Declines, FY 2011



Key Budget-related Sites

- Fiscal Year 2013 Budget Request

http://www.nsf.gov/about/budget/fy2013/index.jsp

- NSF Strategic Plan for Fiscal Years 2011-2016

http://www.nsf.gov/news/strategicplan/nsfstrategicplan_2011_2016.pdf

- NSB Report on Merit Review

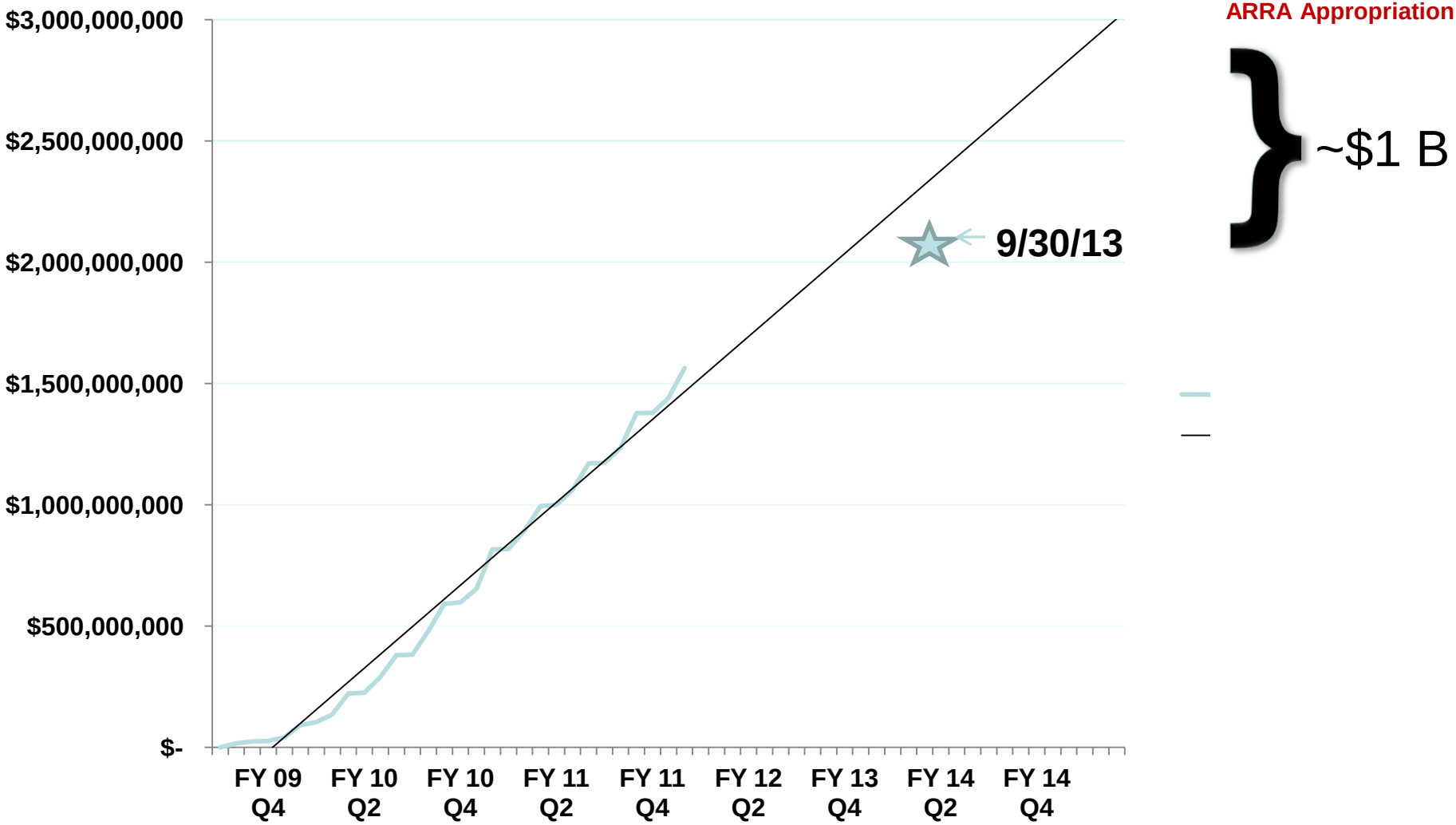
http://www.nsf.gov/nsb/publications/2011/meritreviewcriteria.pdf

ARRA Acceleration: NSF Implementation of OMB Memorandum M-11-34

OMB Memorandum M-11-34

- Federal agencies directed to accelerate spending of remaining ARRA funds in discretionary grant programs
- Funds not spent by 9/30/2013 will be reclaimed to the extent permitted by law
- Waivers may be requested sparingly in case of:
  - Contractual commitments;
  - Complex environmental review;
  - Programs that are long-term by design and acceleration would compromise core programmatic goals; and/or
  - Special circumstances
- No guarantee of OMB approval of requested waivers

Current NSF ARRA Expenditures total $1.44 billion
Projections for 9/30/13 total Just Over $2 billion



NSF Implementation of OMB M-11-34

- **Interagency coordination –** where necessary, see OMB guidance; coordinate implementation strategy with NIH & other agencies.
- **Aggressive stratification –** analyze NSF ARRA portfolio to determine all areas where we can encourage responsible acceleration.
- **Waiver application –** request OMB waivers as appropriate.
- **Award modification –** modify policies for ARRA awards as necessary; modify no-cost extension policies for all ARRA awards terminating during FY2012 or later.
- **Aggressive communication –** increased communication within NSF, between other agencies & to ARRA recipients.

NSF Implementation of OMB M-11-34
What NSF Staff and Recipients Need to Know!

- Responsible expenditure acceleration now!!
  - Award specific: Consider the program plan and the Ts & Cs and facts and circumstances of each specific award
  - Communicate with the cognizant NSF program officer and check the NSF ARRA web page for guidance:
    http://www.nsf.gov/recovery/
- Grantee approved no-cost extensions (NCE)
  - ARRA grantees may ONLY issue themselves NCE through 9/30/2013, but NOT beyond 9/30/2013
- Waiver requests
  - NSF will only go forward with requests that have a compelling and defendable rationale in accordance with the OMB waiver criteria.

NSF Merit Review Criteria Revision

NSB Task Force on Merit Review

- Established Spring 2010
- Rationale:
  - More than 13 years since the last in-depth review and revision of the review criteria
  - Opportunity to align review criteria with NSF's new Strategic Plan
  - Persistent anecdotal reports about confusion related to the Broader Impacts criterion, and inconsistency in how the criterion was being applied.

Stakeholder Input

- Interviews
  - 20 NSF senior leaders (BIO, CISE, EHR, ENG, GEO, MPS, SBE, OCI, OIA, OISE, OGC, BFA)
  - Representatives of a small set of diverse institutions
- Surveys
  - NSF POs, Division Directors, Advisory Committee members
    - 520 responses, 61% response rate
  - NSF PIs and reviewers
    - 3989 responses, 51% response rate
- NSF website
  - 611 people provided responses to one or more questions (>2200 total comments)

Sec. 526 of America COMPETES Reauthorization Act of 2010

- Instructs NSF to have a Broader Impacts review criterion to address several societal goals
- Further instructs NSF to develop and implement a policy for this criterion related to:
  - Strategies and approaches employed to address the Broader Impacts criterion
  - Assessment and evaluation
  - Institutional engagement
  - Education of NSF staff and potential NSF-supported investigators about new policies

Final Report: Conclusions

- The Intellectual Merit and Broader Impacts review criteria together capture the important elements that should guide the evaluation of NSF proposals.

- Revisions to the descriptions of the Broader Impacts criterion and how it is implemented are needed.

- Use of the review criteria should be informed by a guiding set of core principles.

Merit Review Criteria Guiding Principles

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects.

Merit Review Criteria

When evaluating NSF proposals, reviewers should consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits would accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers are asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

Status and Next Steps

- NSB approved report on December 14, 2011
- Published on January 10, 2012:
  - http://www.nsf.gov/nsb/publications/2011/meritreviewcriteria.pdf
- Next Steps:
  - NSF is developing an implementation plan
  - Revised criteria and principles will be included in the next revision of the *Proposal and Award Policies and Procedures Guide* (external), and the *Proposal and Award Manual* (internal)

Merit Review Process Working Group

Relevant Trends

- The number of proposals submitted is up
- The number of PIs submitting proposals is up

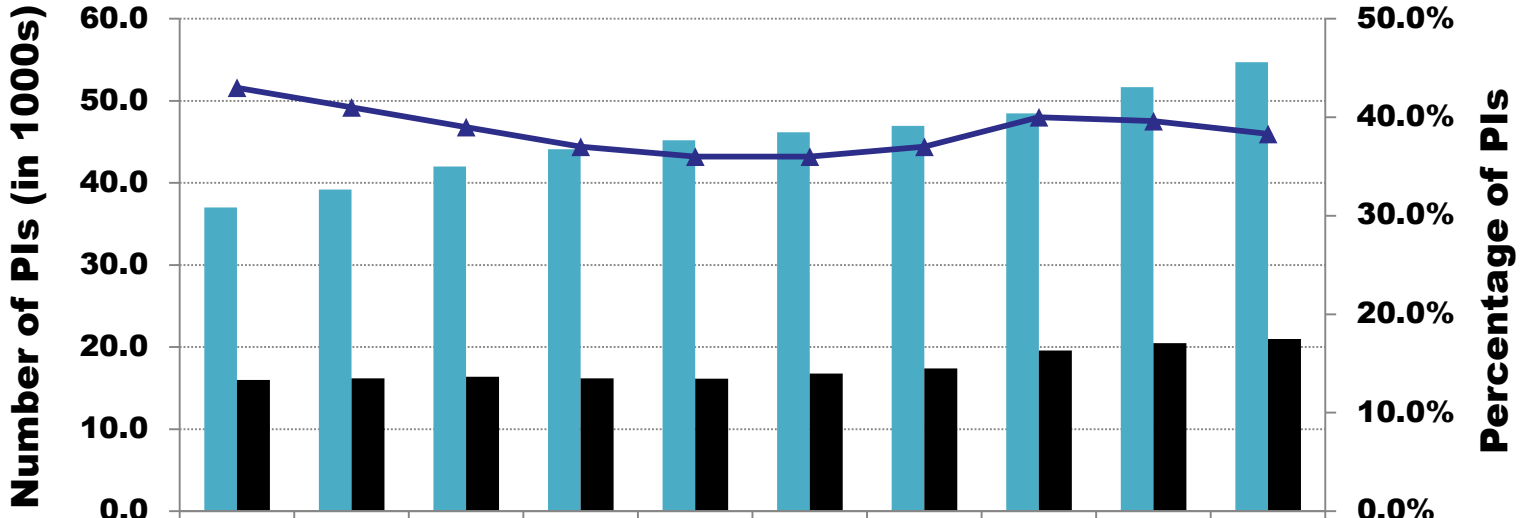
… and Consequences

The merit review process is under stress

- ***PIs:***
  - The number of proposals submitted per PI before an award is rising
  - The proportion of PIs not receiving funding in three years is rising
- ***Reviewers:***
  - Increasing number of proposals increases reviewer workload
  - Increased use of panel-only review increases time and travel commitment for those participating, narrows overall participation
- ***NSF staff:***
  - Workload is high

Main Source of Proposal Pressure

PIs submitting research proposals per 3-year period



	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
PIs Applied	37.0	39.2	42.0	44.1	45.2	46.2	47.0	48.5	51.7	54.7
PIs Awarded	16.0	16.2	16.4	16.2	16.1	16.8	17.4	19.6	20.5	21.0
PIs Funded %	43.0%	41.0%	39.0%	37.0%	36.0%	36.0%	37.0%	40.0%	39.6%	38.3%

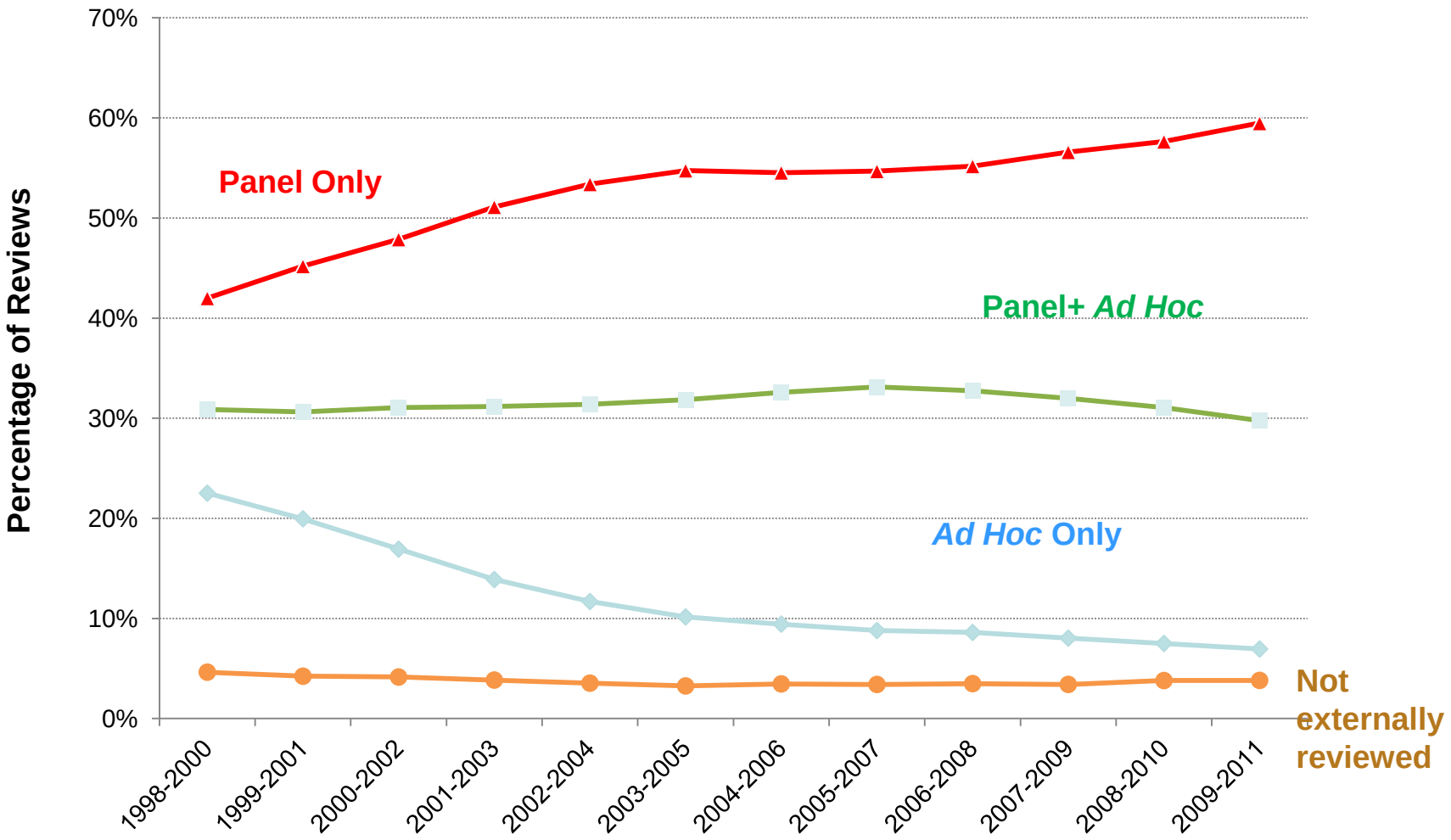
Over the decade -

PIs applying: up 48%

PIs awarded: up 31%

PIs not funded: up 60%

Review Methods



Response

- Look for opportunities to:
  - Be receptive to potentially transformative ideas
  - Reduce the workload on the research community & NSF staff
  - Broaden participation in the review process
  - Take advantage of advances in information technology
- Collect ideas from research community and NSF staff
- Make quantitative and qualitative estimates of impacts:
  - Reviewer workload, NSF staff workload, Travel costs
  - Feedback to PIs, Broadening participation in the review process

Provisional Recommendations

Process Enhancement

- Increase the use of virtual panels from the current 1% to 5% or more
- Use a streamlined *ad hoc* review process to rapidly screen proposal submissions
- Make greater use of preliminary proposals for core programs
- Asynchronous panels
- Automated compliance checking

Next Steps

- Engage divisions and programs interested in pilot activities
- Jointly develop implementation plans for pilots
- Continue to engage research community
- Complete detailed analysis of other potential merit review process enhancements
- Senior management review of recommendations
- Launch pilot activities
- Evaluate pilot activity impact

Research.gov

- Research.gov is NSF's grants management system providing easy access to research-related data and grants management services. Research.gov is the modernization of FastLane, providing the next generation of grants management capabilities for the research community.
- **Research.gov Grants Management Services**
  - Grants Application Status
  - Financial Services, including the Federal Financial Report (FFR)
  - Project Outcomes Report for the General Public
  - Application Submission Web Services
- **This is Just the Beginning…**
  - Research.gov will continue to develop and implement grants management service offerings that fulfill demand in the research community.

Revision of NSF Award Terms & Conditions

Updated Award Terms & Conditions

- Effective for all new grants and funding amendments to existing grants awarded on or after February 1, 2012

- Incorporate revised circumstances under which use of a foreign-flag air carrier is permissible

- New article, **Academic Technology Transfer & Commercialization of University Research**, requiring higher education institutions that have NSF research support and at least $25,000,000 in total Federal research grants in the most recently completed Federal fiscal year, to submit to NSF the URL that contains information on their transfer of technology and commercialization of research results efforts.

Academic Technology Transfer and Commercialization of University Research

Section 520 of the America COMPETES Reauthorization Act of 2010 requires higher education institutions that have NSF research support and at least $25,000,000 in total Federal research grants in the most recently completed Federal fiscal year to submit to NSF the universal resource locator (URL) that contains information on their transfer of technology and commercialization of research results efforts.

The URLs are displayed as submitted to the National Science Foundation. Awardees are responsible for the information contained on these websites. NSF has not approved or endorsed the content of these websites.

This requirement is effective for all new awards and funding amendments to existing NSF grants awarded on or after February 1, 2012. It has been implemented via a new NSF award term and condition, which states:

"a. Any institution of higher education (as such term is defined in section 101(A) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)) that receives National Science Foundation research support (i.e., any grant or cooperative agreement awarded by NSF) and has received at least $25,000,000 in total Federal research grants in the most recently completed Federal fiscal year shall keep, maintain, and report annually to the National Science Foundation the universal resource locator (URL) for a public website that contains information concerning its general approach to and mechanisms for transfer of technology and the commercialization of research results, including:

1. contact information for individuals and university offices responsible for technology transfer and commercialization;
2. information for both university researchers and industry on the institution's technology licensing and commercialization strategies;
3. success stories, statistics, and examples of how the university supports commercialization of research results;
4. technologies available for licensing by the university where appropriate; and
5. any other information deemed by the institution to be helpful to companies with the potential to commercialize university inventions.

For purposes of determining whether an institution meets the threshold for this requirement, both the NSF research support and the Federal research grants must have been active at some point during the most recently completed Federal fiscal year.

The institution's URL containing the information required in section a. must be electronically submitted to the following email alias: ACA520@nsf.gov. The URLs will be available to the public on the Science, Engineering and Education (SEE) Innovation section of Research.gov at: http://www.research.gov/acasection520.

b. Trade Secret Information - Notwithstanding section a., an institution shall not be required to reveal confidential, trade secret, or proprietary information on its website."

Institution-Submitted URLs

- The Florida State University
- Old Dominion University
- University of Hawai'i
- The University of Houston
- The University of Texas at Austin
- The University of Texas at Dallas
- The University of Texas Health Science Center at Houston

Cost Sharing Implementation at NSF

Progress Update

Cost Sharing Update

- As recommended by the National Science Board and implemented by NSF, inclusion of voluntary committed cost sharing is prohibited in solicited & unsolicited proposals, unless approved in accordance with agency policy.

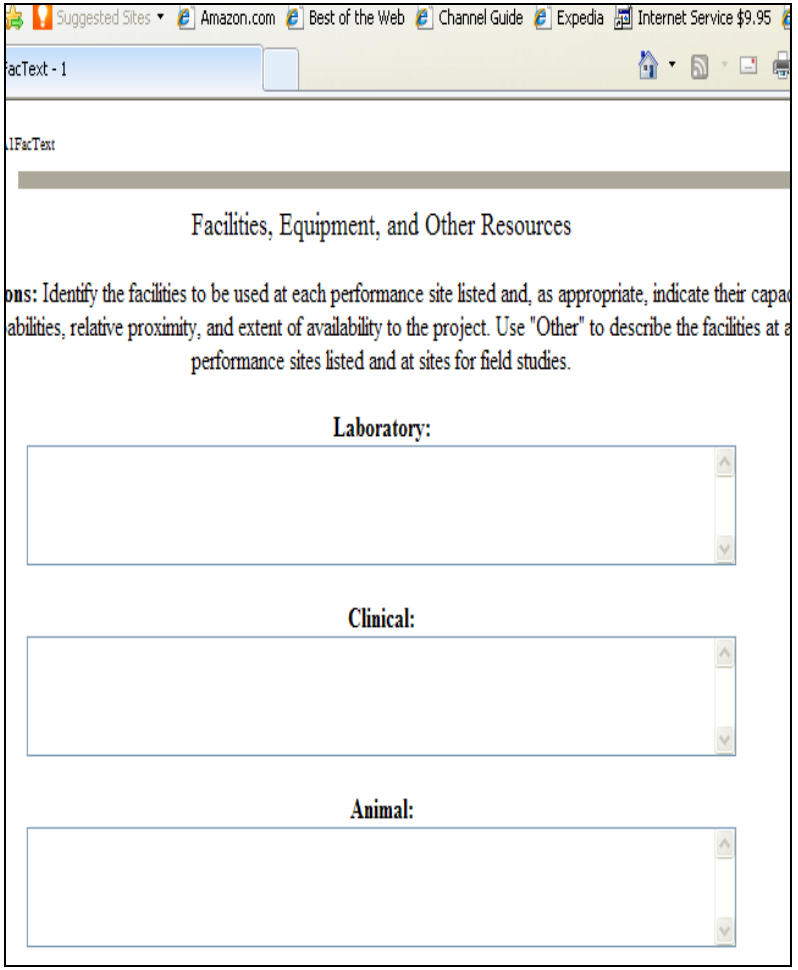
- Only 6 programs have been approved to require cost sharing:

  - Major Research Instrumentation Program (MRI);
  - Robert Noyce Scholarship Program;
  - Engineering Research Centers (ERC);
  - Industry/University Cooperative Research Centers (I/UCRC);
  - Experimental Programs to Stimulate Competitive Research (EPSCoR); and
  - Innovation Corps (I-Corps)

Cost Sharing Update – Facilities, Equipment & Other Resources

- Provide a comprehensive description of all resources (**both physical and personnel**) necessary for, and available to the project

- No reference to cost, date of acquisition, and whether the resources are currently available or would be provided upon receipt of award



Cost Sharing Update

- Next version of the *Proposal & Award Policies & Procedures* (PAPP) Guide will include a revision to the Facilities, Equipment & Other Resources section, to clarify what should be included
- Working to address issue of PI time on budget in FastLane.
- Anticipated issuance of the next PAPP Guide is October 2012, and effective January 2013
- Cost sharing FAQs: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=costsharefaqs
- Send additional questions to costsharing@nsf.gov

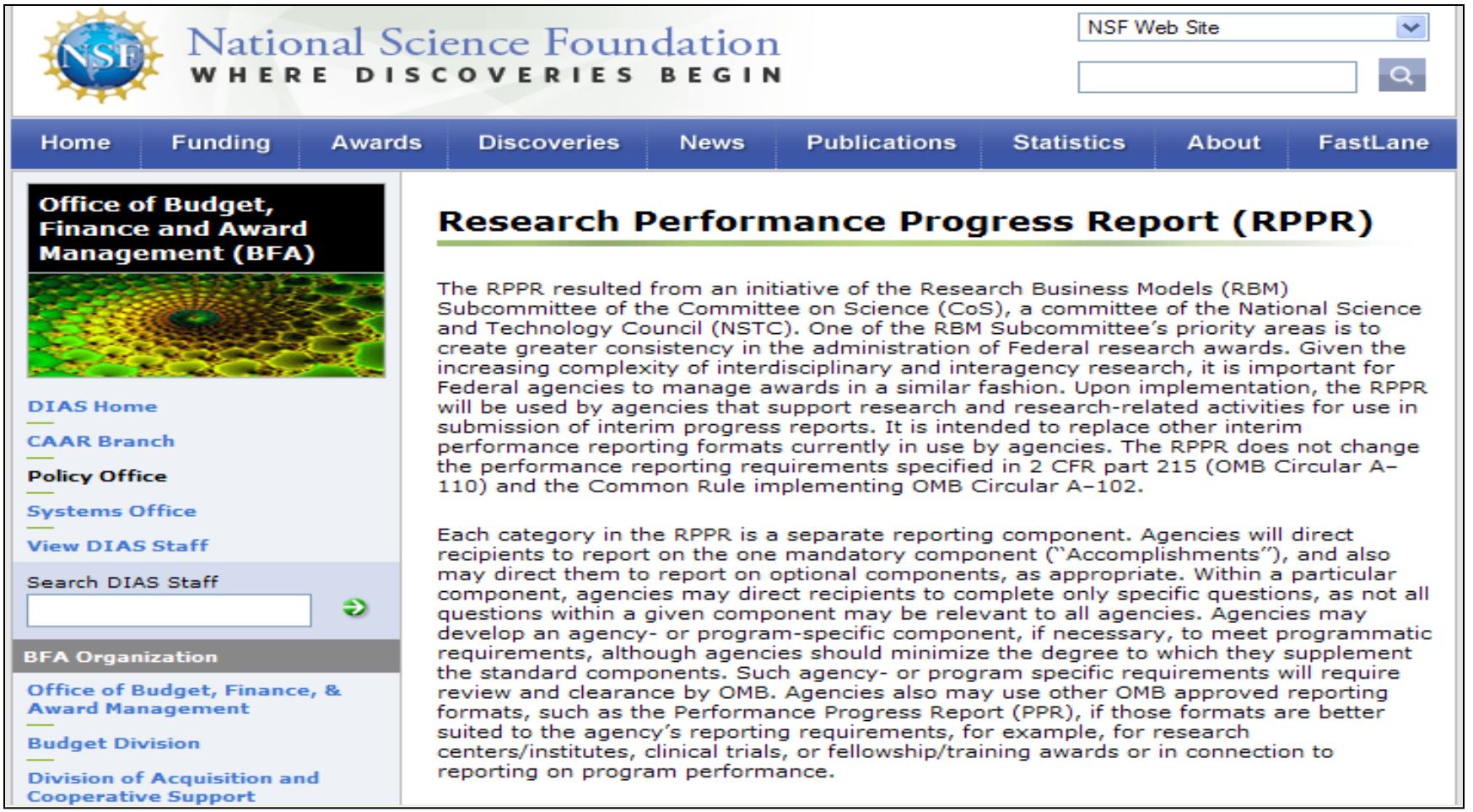
Research Performance Progress Report (RPPR) at NSF

Progress Update

RPPR Background

- The Research Performance Progress Report (RPPR) is a new, government-wide standard form for award recipients to report on the progress of federally-funded research and research-related projects
- Brief history of the RPPR
  - The RPPR is the result of Research Business Models (RBM) Subcommittee of the Committee on Science (CoS), a committee of the National Science and Technology Council (NSTC) policy-led effort to create greater consistency in administration of federal research awards
  - Upon implementation, the RPPR will be used by federal agencies that support research and research-related activities. It is intended to replace other performance reporting formats currently in use by agencies
  - Agencies were required to post an implementation plan within nine months of the issuance of the OSTP/OMB Policy Letter

RPPR Website



http://www.nsf.gov/bfa/dias/policy/rppr/index.jsp

NSF Implementation of RPPR Components

- NSF plans to implement the RPPR as a new service in Research.gov, utilizing the following components as part of an NSF-wide standard format:
- Mandatory Category:
  - Accomplishments: What was done? What was learned?
- Optional Categories:
  - Products: What has the project produced?
  - Participants & Other Collaborating Organizations: Who has been involved?
  - Impact: What is the impact of the project? How has it contributed?
  - Changes/Problems
  - Special Reporting Requirements (where applicable)
  - Appendix 1: Demographic Information for Significant Contributors

NSF Implementation Progress Update

- Research.gov will offer the RPPR format starting January 2013, replacing NSF's annual, interim, and final project reporting capabilities which currently reside in the FastLane System
  - The project reporting service will provide a common portal for the research community to manage and submit annual, interim, and final progress reports
  - One of the key drivers in development of the project reporting service is the reduction of PI and co-PI burden through use of more innovative mechanisms to pre-populate parts of the report
  - Another key driver is to incorporate more structured collection of the project reports data for enhanced NSF use

Questions