



Revising the NSF Strategic Plan

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On Behalf of the NSF Strategic
Plan Working Group

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Strategic Plan Working Group

- Established by the acting Deputy Director in September 2009
- Consists of deputies from each Directorate/Office
- Received guidance from SMaRT
- Initial Input from AC members and NSF staff



Requirements of a Strategic Plan

(From A-11)

- NSF is required by GPRA legislation to develop a 5-year strategic plan every 3 years
 - Current plan spans 2006-2011
 - New plan will be for 2010-2015
- Prescribed components:
 - Mission
 - Strategic Goals
 - Performance Goals
 - External Risk Factors
 - Strategies and Means
 - Program Evaluations
- Plans are submitted to Congress and OMB



Mission and Vision

Mission (in statute):

To promote the progress of science; to advance the national health, prosperity and welfare; to secure the national defense and for other purposes

Vision

- **Old Plan:** Advancing discovery, innovation and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering
- **Draft Plan:** A nation that capitalizes on advances in science and engineering and provides global leadership in research and education



Strategic Goals

Old Plan

- **Discovery:** Foster research that will advance the frontiers of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.
- **Learning:** Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.
- **Research Infrastructure:** Build the nation's research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.
- **Stewardship:** Support excellence in science and engineering research and education through a capable and responsive organization.

Strategic Goals

Draft Plan

- **Transform the Frontiers** emphasizes the seamless integration of research and education as well as the close coupling of research infrastructure and discovery.
- **Innovate for Society** points to the tight linkage between NSF programs and societal challenges, and it highlights the role that new knowledge and creativity play in economic prosperity and society's general welfare.
- **Perform as a Model Organization** emphasizes the importance of NSF as an exemplar of an agency that expects to attain excellence in all operational aspects.



Draft Long-term Performance Goals

Transform the Frontiers

- *T-1: Make investments that lead to emerging new fields of science and engineering and dramatic shifts in existing fields.*
- *T-2: Prepare and engage a diverse STEM workforce motivated to participate at the frontiers.*
- *T-3: Focus international partnerships on transforming the frontiers.*
- *T-4: Enhance research infrastructure and promote data access to enable transformation at the frontiers.*



Draft Long-term Performance Goals

Innovate for Society

- *I-1: Make investments that lead to results and resources that are useful to society.*
- *I-2: Build the capacity of the nation's citizenry for addressing societal challenges through science and engineering.*
- *I-3: Catalyze the development of innovative learning systems.*



Draft Long-term Performance Goals

Perform as a Model Organization

- *M-1: Achieve management excellence through leadership, accountability, and personal responsibility.*
- *M-2: Infuse learning as an essential element of the NSF culture with emphasis on professional development and personal growth.*
- *M-3: Encourage and sustain a culture of creativity and innovation across the agency to ensure efficiency and effectiveness in achieving high levels of customer service.*
- *M-4: Test and refine a range of emerging approaches to the assessment of NSF's portfolio of long-term investments in science and engineering research and education.*



Draft Performance Framework

NSF Assessment Framework: Time Frames and Potential Approaches

Time Frame	Focus of Assessment Activities	Types of Measures, Processes, etc.
On-going to Near-term (1 year)	NSF Portfolio Development	Portfolio and Customer Service Measures: <ul style="list-style-type: none"> • Timeliness (customer service/dwell time) • Key Award Trends (size, duration, funding rate) • Broadening Participation, especially among reviewers, applicants, participants • Implementation of strategies, initiatives • Use of novel mechanisms in merit review process
Mid-term (1-5 years)	NSF Portfolio Monitoring	Activities to monitor NSF investments and investment strategies: <ul style="list-style-type: none"> • Financial measures (draw down of funds at expected rates) • Award monitoring via project reports, site visits, principal investigator (PI) meetings, etc. • COV process • Project/program specific measures, such as cost and schedule for construction projects and operational measures for facilities activities. • Development of partnerships
Long-term (>5 years)	Investment Returns, Results, and Outcomes	Retrospective assessments, especially in areas of focused, sustained NSF investments: <ul style="list-style-type: none"> • Knowledge impacts: new fields, transformation of existing fields • Economic impacts: overall returns, knowledge transfer across sectors • People impacts: career trajectories of participants in NSF-supported activities • Societal impacts: benefits, improvements to quality of life



Draft Sample Indicators of Progress

T-1: *Make investments that lead to emerging new fields of science and engineering and dramatic shifts in existing fields.*

Sample Indicators of Progress		
On-going		
<ul style="list-style-type: none"> - Data from administrative systems on merit review process, key award trends, funding rate, etc. - Highlights and other performance data from annual and final reports. - COV outcomes on use of merit review, characteristics of award portfolio. 		
Near-term	Mid-term	Long-term
<ul style="list-style-type: none"> - Management information systems that account for interdisciplinary research (IDR) and potentially transformative research (PTR) proposals and awards. - Baseline for merit review and funding of IDR and PTR proposals. - New mechanisms for encouraging and reviewing IDR and PTR proposals. - New PTR and IDR training for program officers and panel members. 	<ul style="list-style-type: none"> - Level of funding for IDR and PTR relative to baseline. - Development of tools for assessing the outcomes of the portfolio with respect to emerging fields and significant change in extant fields. - COV assessment of IDR and PTR awards in program portfolio. 	<ul style="list-style-type: none"> - Use of newly developed tools to investigate changes in the "map of science" over time. - Retroactive assessment of outcomes. - Evaluation of effectiveness of program strategies.



Draft Strategies and Means

Core Strategies

- *Be a leader in envisioning the future of science and engineering.*
- *Manage investments using a portfolio approach.*
- *Integrate research and education and build capacity.*
- *Broaden participation.*
- *Learn through assessment and evaluation of NSF programs, processes and outcomes; continually improve them; and employ outcomes to inform NSF planning, policies and procedures.*

Means for Carrying Out Core Strategies

- *Interaction and partnership with stakeholder communities.*
- *Program-oriented business processes related to development and oversight of the award portfolio.*
- *Management-oriented business processes.*



Remaining Timeline

- **SMaRT Input -- now**
- **CSB/NSB Input -- now**
- **NSF Staff Input -- now**
- **NSF AC Member Input -- now**
- **NSB Meeting – May 2010**
- **Draft to OMB May 2010**
- **Revision Based on Comments**
- **SMaRT/NSB Approval**
- **Final in Early Summer**