



INSIGHTS FROM A FORMER NSF PROGRAM DIRECTOR

**Rick McCourt, Academy of
Natural Sciences, Philadelphia**

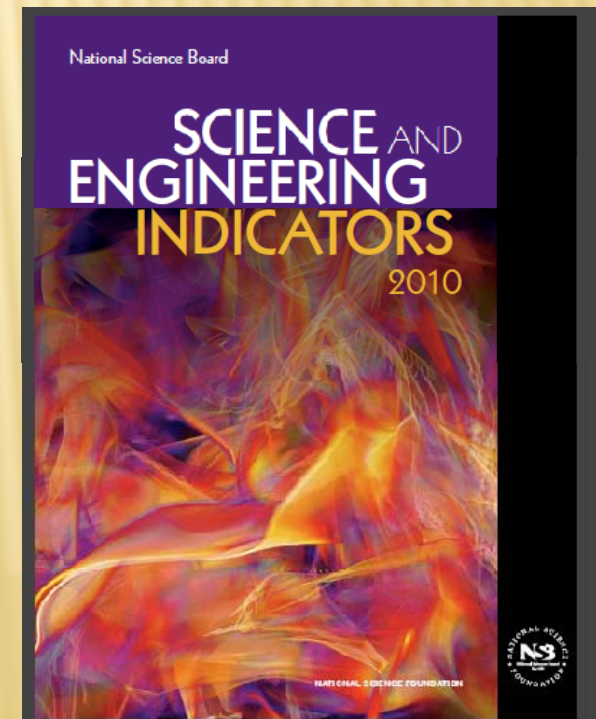


PRESENTATION

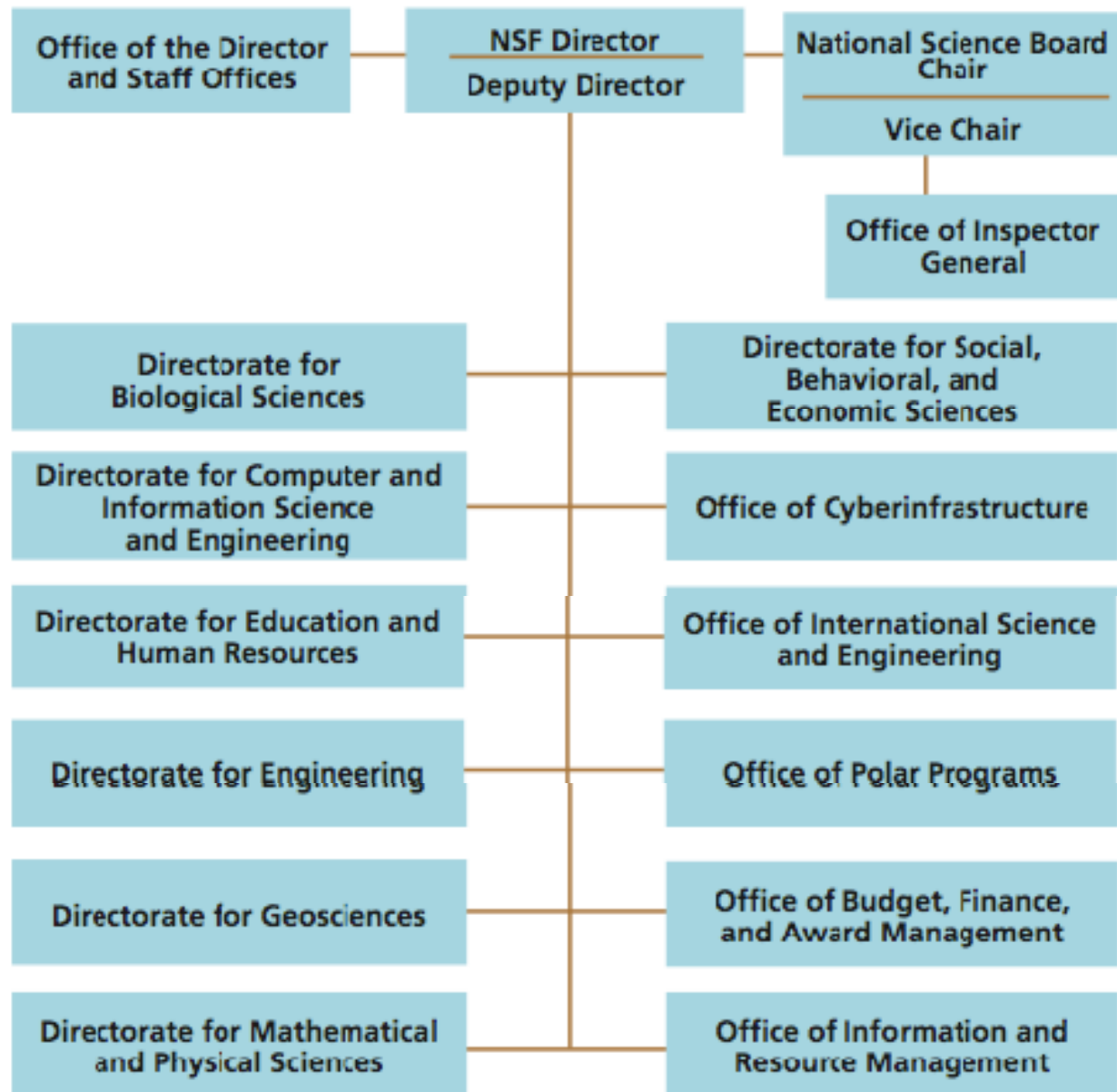
- Overview of NSF
- Searching for Information
- The Review Process
- Preparing Competitive Proposals

NSF IN A NUTSHELL

- *Established as an independent agency (NSF Act of 1950), governed by the National Science Board*
- *Organized into discipline-based Directorates and Offices; Special responsibilities: Antarctic Program, **Science and Engineering Indicators**, International Science*
- *Budget: 6.9 billion (FY10); 7% percent incr.*
- *Makes 10,000 new awards from > 40,000 submissions with approx 25% success rate*
- *Supports ~200,000 faculty, researchers, fellows, students*
- *Uses rotators, visiting scientists, IPAs*



FY 2007 Organization Chart



TYPES OF PROPOSAL SUBMISSION

Solicited vs. Unsolicited

- *Solicited proposals have a published Program Solicitation / Program Announcement*
 - *Unsolicited proposals are associated with regular research programs (check websites and GTP)*
-

❑ No deadlines

(e.g. workshops, EAGERS)

❑ Deadlines

❑ Target dates

❑ Submission windows

➤ Solicited: Preliminary proposals or Letters of Intent



National Science Foundation

WHERE DISCOVERIES BEGIN

SEARCH

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FEATURES

1 2 3 4 ||

Funding Opportunities

- [Find Funding Opportunities](#)
- [Upcoming Due Dates](#)
- [How to Prepare Your Proposal](#)
- [Funding Trends](#)

Program Areas

Select One

Quick Links

Select One

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Special Notice

[NSF Information Related to the American Recovery and Reinvestment Act of 2009](#)

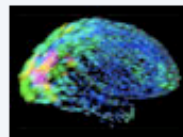
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Early

FEATURES 1 2 3 4 II

Funding Opportunities

- [Find Funding Opportunities](#)
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- [Funding Trends](#)

Program Areas

- Select One
- Select One
 - Biology
 - Computer, Info. Sci., Eng.
 - Crosscutting, NSF-wide
 - Cyberinfrastructure
 - Education
 - Engineering
 - Environmental Research
 - Geosciences
 - Integrative Activities
 - International
 - Math, Physical Sciences
 - Polar Research
 - Social, Behavioral, Econ.

[Search Staff Directory](#)

Special Notice

[NSF Information Related to the American Recovery and Reinvestment Act of 2009](#)

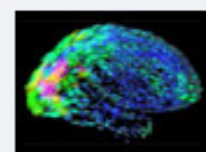
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[NSF-Wide Investments](#)

WHERE DO YOU SUBMIT YOUR IDEAS?

<http://www.nsf.gov>

Directorate → Division → Programs →
Information on NSF contacts, award
abstract, program description, deadlines

Guide to Programs (GTP)

Grant Proposal Guide (GPG, Jan. 2010)

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The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

PROGRAMS OF INTEREST

- o Education and training
- o Infrastructure
- o Research



RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU)

- Two mechanisms: Sites and Supplements
- Research training program for undergrads
- Sites: Usually 10 weeks in summer for 10 students
- Hands-on participation in research leading to presentations and publications

REU Sites Solicitation NSF 09-598

Due Date: August 25, 2010

UNDERGRADUATE RESEARCH AND MENTORING IN THE BIOLOGICAL SCIENCES (URM)

- Research training program for under-represented minority students
- Goal: increase the ethnic diversity of graduate students in PhD programs
- Year-round mentoring and enhancement activities
- Five-year awards, up to \$1 million

Solicitation 06-591, Due Dates:
Prelim--Third Tuesday in September
Full--First Tuesday in March

EHR DIRECTORATE

DIVISION OF UNDERGRADUATE EDUCATION

- **Course, Curriculum and Laboratory Improvement (CCLI) NSF 07-543 Due Jan 13, 2010 (see web page)**
 - Supports creation of new learning materials and teaching strategies; or dissemination
 - Conduct research on STEM teaching and learning
 - Projects: Small exploratory projects → large comprehensive projects
- **Advanced Technological Education (ATE) NSF 07-530 Due Oct 2010?**
 - Supports curriculum development, faculty development
 - Pathways from secondary schools to 2-yr colleges, and 2-yr to 4-yr institutions
 - Improvement of instruction and better preparation of students for entry into high-tech jobs and into 4-yr institutions

MAJOR RESEARCH INSTRUMENTATION (MRI)

- Acquisition or development of major research instrumentation
- Maintenance and technical support associated with these instruments
- Proposals may be for a single instrument, a large system of instruments, or multiple instruments that share a common research focus
- Coordinated thru the Office of Integrative Activities (NSF-wide)
- Emphasis must be on research

Deadline Date: Not available 1/19/10

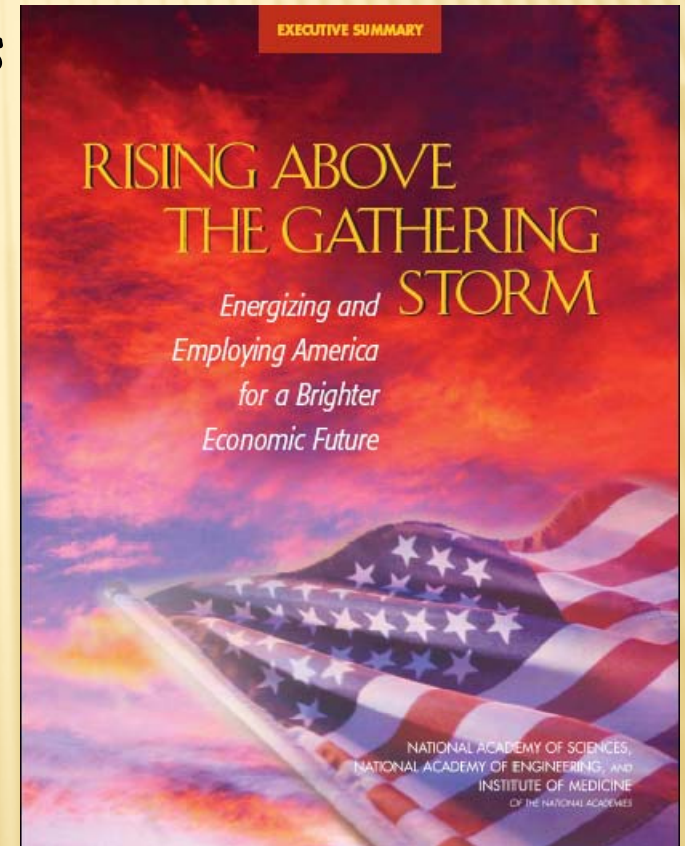


RESEARCH OPPORTUNITY AWARDS (ROA)

- Provide support for faculty from PUIs to participate in ongoing, NSF-funded research projects for limited periods, usually a summer
- Goal -- Provide research experience for faculty to enhance research at home institution and host lab, improve research & teaching
- Funded as supplements to active NSF grants
 - ◆ Salary or stipend for undergraduate faculty
 - ◆ Travel to host lab and/or to attend a meeting
 - ◆ Research supplies
- Making connections with an NSF grantee:
 - ◆ Network at scientific meetings
 - ◆ Consult NSF FastLane list of awards in relevant program
 - ◆ Contact NSF Program Director in your area of interest (Consult the NSF web site for contact information)

Research Initiation Grants/ Career Advancement Awards (RIG-CAA) in the Biological Sciences

- ❑ Broaden the participation of scientists from under-represented groups
- ❑ Assist members to become actively engaged in research as independent investigators
- ❑ CAA: Targets scientists other than Beginning Investigators to enhance career development
- ❑ Improve competitiveness for research funds; Acquire new skills/tools for contemporary research
- ❑ Estimated Awards: 15 - 25, about
- ❑ \$3 Million annually



Solicitation 07-560
Due Date: 2nd Monday in Jan

Research at Undergraduate Institutions (RUI)

- Designed to support Research in Predominantly Undergraduate Institutions (PUI)
- RUI is a mechanism, not a separate funding stream
- ~ 10% of proposals submitted to BIO research programs are RUIs
- “RUI” should be designated in the title of the proposal
- Five page (max) “RUI impact statement” must accompany proposal
- Check <http://www.nsf.gov/home/crssprgm> for announcement (NSF-wide)

Faculty Early Career Development Program (CAREER)

- Supports teacher-scholars who will become the academic leaders of the 21st century
- Supports plans that effectively integrate research and education
- Funding approx \$100,000/year for 5 years (BIO; \$400K other disciplines)

Solicitation 05-579

Due Date: July 20-22, 2010

Depending on Directorate



EARLY-CONCEPT GRANTS FOR EXPLORATORY RESEARCH (EAGER)

- Exploratory work in its *early stages* on untested, but potentially transformative, research ideas or approaches
- Replace **part** of SGER
 - ◆ “High Risk-High Payoff”
 - ◆ Radically different approaches, new expertise, or novel disciplinary or interdisciplinary perspectives
- Budget consistent with project scope and existing programmatic activities (**up to \$300K for 2 years**)

Only one of the ways NSF supports potentially transformative research

MORE EAGER

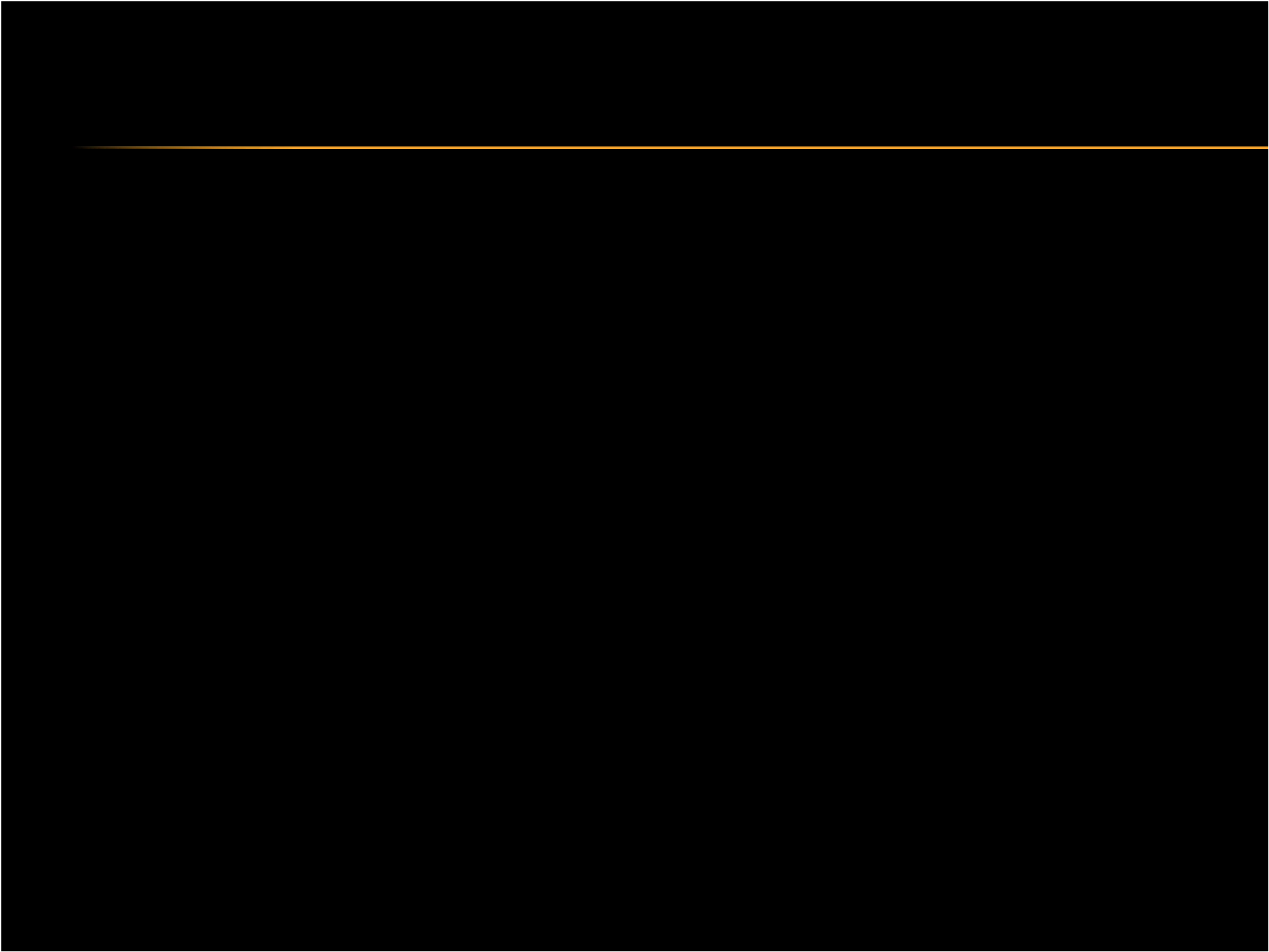
- Program Officer approval needed:
PI needs to convince **appropriateness** for EAGER submission Vs “regular” NSF proposals
- Require internal review/**with optional external input**
- 5-8 page project description
- No supplements – no-cost extensions: existing NSF policies

GRANTS FOR RAPID RESPONSE RESEARCH (RAPID)

- Rapid release of funds and expedited merit review
- Replace **part** of SGER
 - ◆ *having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events*

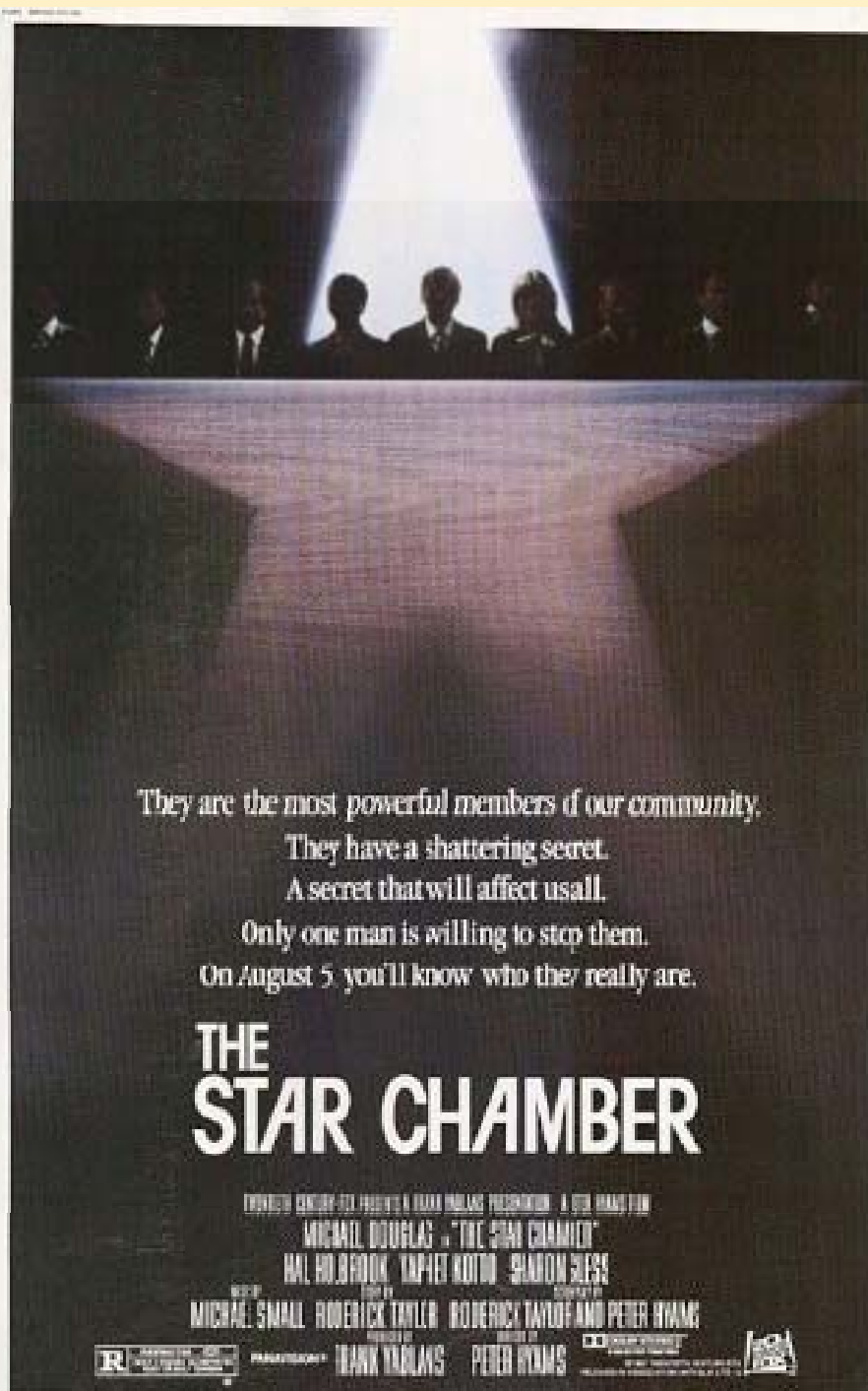
MORE RAPID

- Budget consistent with project scope and existing programmatic activities (up to \$200K for 1 year)
- Require internal review/**with optional external input**
- 2-5 page project description, otherwise GPG guidelines
- No cost extensions?/supplements -- existing NSF policies



THE REVIEW PROCESS





*They are the most powerful members of our community.
They have a shattering secret.
A secret that will affect us all.
Only one man is willing to stop them.
On August 5, you'll know who they really are.*

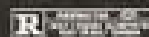
THE STAR CHAMBER

EPICENTRE ENTERTAINMENT PRESENTS A RALPH HANSEN PRODUCTION A STEVE HANSEN FILM

MICHAEL DOUGLAS IN "THE STAR CHAMBER"

HAL HOLBROOK YIP-WEI KOTU SHARON GLESS

CASTING BY MICHAEL SMALL
EDITED BY RODERICK TAYLOR
PRODUCTION DESIGNER RODERICK TAYLOR AND PETER HYAMS



PARADIGMA

THANK YOU

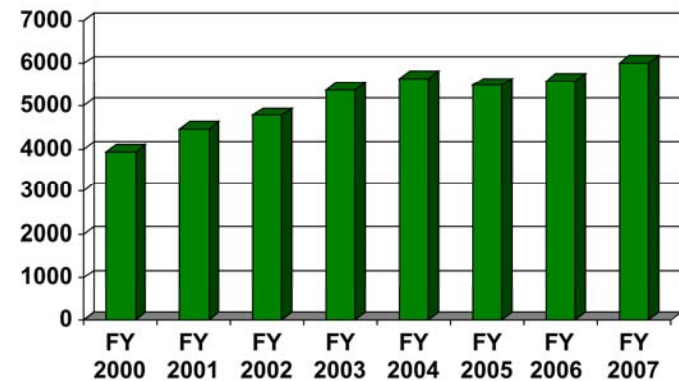
PETER HYAMS

CO-PRODUCED BY

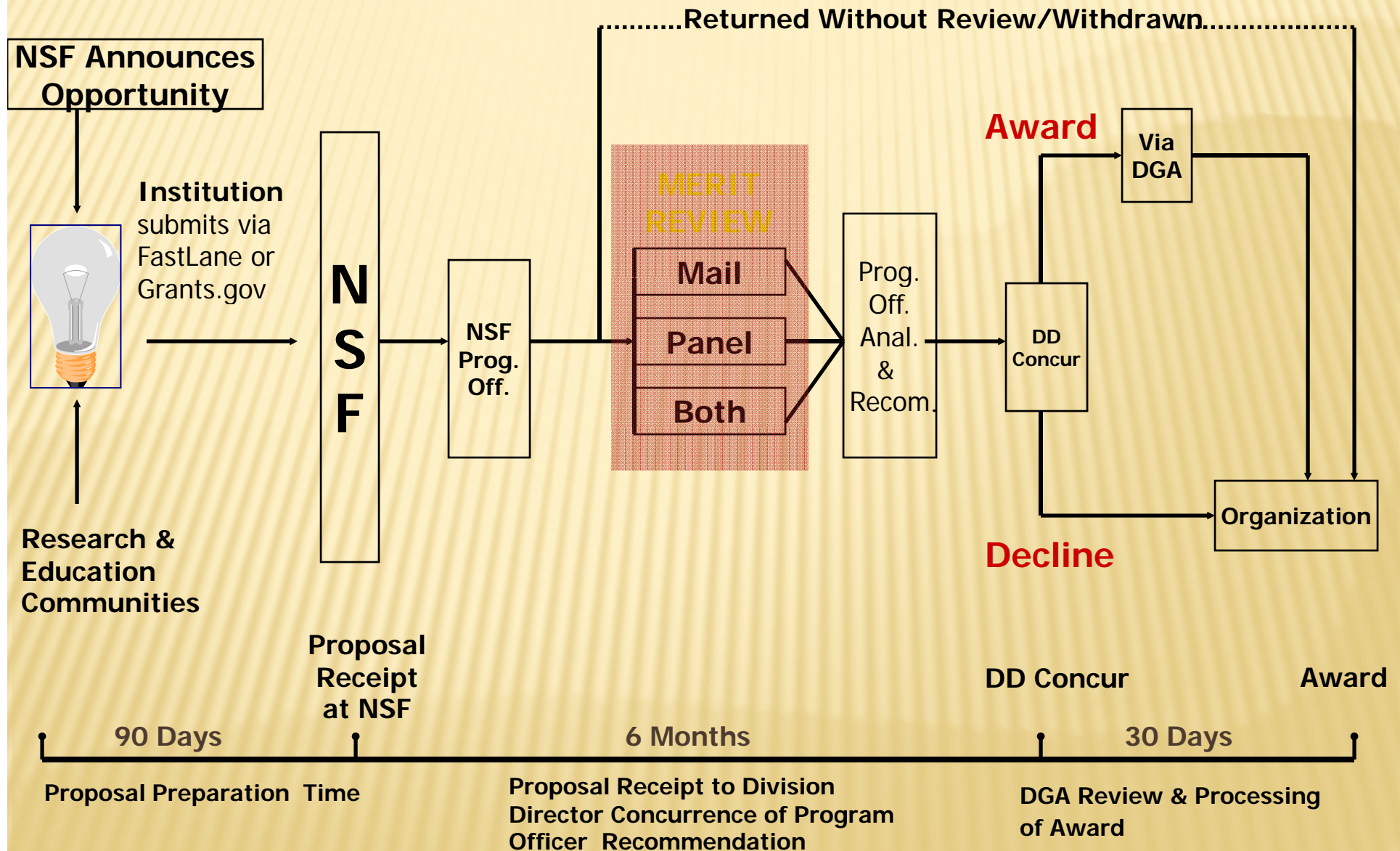


THE REVIEW PROCESS

- What happens to your proposal
- Two Review Criteria



NSF Proposal & Award Process & Timeline



Merit Review Criteria

Criterion 1: What is the intellectual merit of the proposed activity?

- *Creativity* and *originality* of ideas
- *Qualifications* of investigators
- Access to *resources*
- Established *expertise* or expert *collaborations*

Criterion 2: What are the broader impacts of the proposed activity?

- Potential to *advance field*
- Participation of *underrepresented groups*
- *Benefits to society*

PREPARING COMPETITIVE PROPOSAL

- Helpful tips
- What to do if declined
- How funding decisions are made



TIP #1. DO YOUR HOMEWORK

- Read the Program announcement/solicitation
 - ◆ Understand goals, eligibility, requirements
 - ◆ Research or teaching?
- Become familiar with program
 - ◆ Serve as a reviewer (ad hoc or on a panel)
 - ◆ Examine prior NSF awards in similar areas
 - ◆ Read successful proposals
- Talk with people:
 - ◆ Program Officers
 - ◆ Current or former “rotators”

TIP #2. **WRITE WELL**

- Start early (write and rewrite)
- Get critiques from:
 - ◆ Mentors/colleagues
 - ◆ Previous members of review panels
- Be aware of the scope:
 - ◆ “Too ambitious” vs. “Too narrow”
- Be honest and up-front:
 - ◆ Address issues instead of trying to hide them
 - ◆ Acknowledge possible experimental problems and have alternatives

TIP #3. ANTICIPATE REVIEWER COMMENTS

- Do not assume reviewer knows what you are thinking
- Simplify and streamline
 - ◆ Make sure you get your overall idea across!
- Pay attention to details:
 - ◆ Run “spell check” and proof-read
 - ◆ Prepare clear photos, graphs, etc.
 - ◆ Use allowed font size
- Be aware of reviewer fatigue

IF YOU HAVE TO RESUBMIT. . . AND YOU WILL

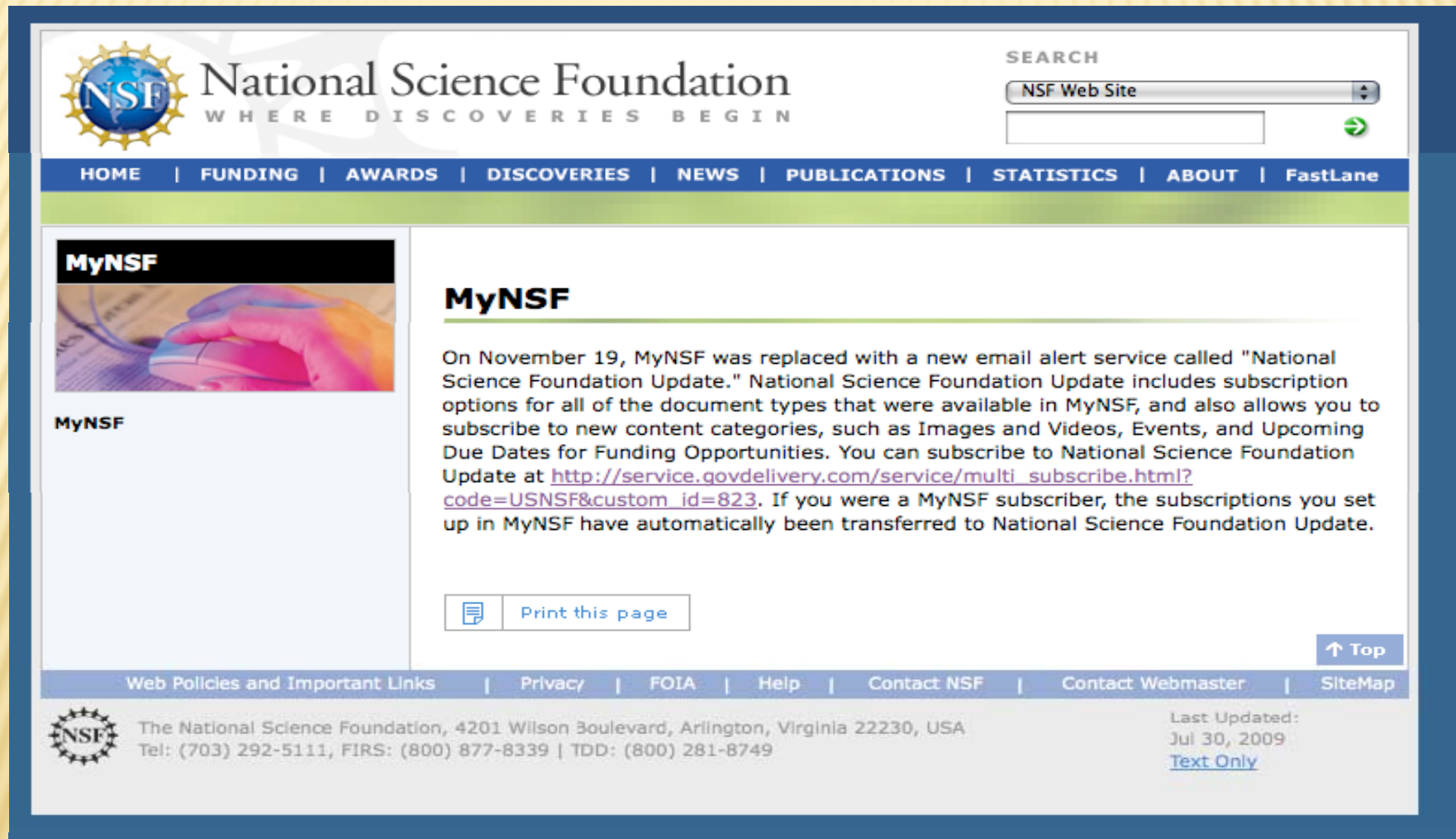
- Stay calm!
 - ◆ Take ten... breaths, hours, days
 - ◆ Examine the criticisms carefully
- When sarcastic thoughts fade, contact your program director
 - ◆ Email, call, or visit
 - ◆ Find out how to improve proposal
- Include a 'Response to Reviewer Comments' section in the resubmission

HOW FUNDING DECISIONS ARE MADE

Program Director makes recommendations to the Division Director based on:

- geographic distribution
- type of institution
- PI demographics
- potential high payoff

Updates for NSF Opportunities



The screenshot shows the NSF website with a blue header and a green navigation bar. The main content area is white. On the left, there is a sidebar with the MyNSF logo and a photo of a hand clicking a computer mouse. The main text area contains the heading "MyNSF" and a paragraph explaining the transition to the "National Science Foundation Update" service. A "Print this page" button is located below the text. The footer contains contact information, a "Last Updated" date, and a "Text Only" link.

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MyNSF

MyNSF

On November 19, MyNSF was replaced with a new email alert service called "National Science Foundation Update." National Science Foundation Update includes subscription options for all of the document types that were available in MyNSF, and also allows you to subscribe to new content categories, such as Images and Videos, Events, and Upcoming Due Dates for Funding Opportunities. You can subscribe to National Science Foundation Update at http://service.govdelivery.com/service/multi_subscribe.html?code=USNSF&custom_id=823. If you were a MyNSF subscriber, the subscriptions you set up in MyNSF have automatically been transferred to National Science Foundation Update.

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