Mastering Research Administration

A Complete Guide to the CRA®, CPRA®, and CFRA® Exams

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Disclaimer:

- These multiple-choice questions and the accompanying text were originally developed in 2022 and were reviewed and updated in August 2025. Grant policies, rules, and regulations may change over time. Please consult official sources for the most current information.
- While it is generally considered best practice to avoid negative phrasing and answer choices such as “all of the above” or “none of the above” in standardized multiple-choice questions, these materials were created for training purposes. In some instances, we have intentionally used such formats.

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CHAPTER 6
National Science Foundation (NSF)

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6.1. Introduction

The **National Science Foundation (NSF)**, established in 1950 as an independent federal agency, is the only federal agency whose mission covers support for all fields of science, engineering, and STEM education, apart from medical sciences. Its mission is "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes."

NSF aims to lead the world in discovery and innovation, develop STEM talent across diverse communities, and deliver benefits from research to society. NSF provides about 25% of all federally supported fundamental research at U.S. colleges and universities and has supported more than 220 Nobel Laureates since its inception.

The National Science Foundation (NSF) receives about 40,000 proposals per year, and funds approximately 10,000 of them. That means roughly 1 in 4 proposals gets funded.

6.2. Organization of Research Areas

NSF organizes its research portfolio primarily through **eight discipline-based directorates**, listed below. Each directorate has a three- or four-letter abbreviation.

- Biological Sciences (BIO)
- Computer & Information Sciences & Engineering (CISE)
- STEM Education (EDU)
- Engineering (ENG)
- Geosciences (GEO)
- Mathematical & Physical Sciences (MPS)
- Social, Behavioral & Economic Sciences (SBE)
- Technology, Innovation & Partnerships (TIP)

Within each **directorate**, there are **divisions**, which are further broken down into **sections**, and each section administers **programs**. These programs are managed by **Program Directors**, who oversee proposal review, award decisions, and program priorities.

6.3. NSF Proposals

Each NSF proposal typically includes the following elements:

- Project Summary
- Table of Contents (auto generated in Research.gov, and formerly FastLane)
- Project Description
- References Cited
- Biographical Sketches
- Budget and Budget Justification
- Current and Pending Support
- Facilities/Equipment/Other Resources
- Special Information and Supplementary Documents
- Data Management Plan
- Mentoring Plan (if applicable)
- Single Copy Documents
- Collaborators and Other Affiliations

Types of NSF Proposals

NSF accepts multiple types of proposals; each designed for different objectives and timelines:

- **Standard Proposals** – Regular research proposals submitted according to NSF deadlines for funding typical research projects.
- **Planning Proposals** – Smaller proposals aimed at planning larger projects, developing collaborations, or preparing for future research.
- **Rapid Response Proposals**:
    - **RAPID** – Urgent research requiring immediate funding due to natural disasters, emergencies, or unexpected events.

- **EAGER (Early-concept Grants for Exploratory Research)** – High-risk, exploratory research in its early stages that may not fit within standard funding mechanisms.
- **RAISE (Research Advanced by Interdisciplinary Science and Engineering)** – Interdisciplinary, transformative research that could have high impact.

- **GOALI (Grant Opportunities for Academic Liaison with Industry)** – Designed to foster partnerships between academia and industry to advance research and education.
- **Ideas Lab** – Supporting creative, collaborative teams to tackle complex, emerging scientific challenges.
- **FASED (Facilities Access and Equipment Support for Education and Development)** – Proposals to gain access to specialized research facilities or equipment.
- **Career Life Balance (CLB) Supplemental Funding** – Support for researchers facing life events that may impact their ability to continue their research (e.g., family leave).
- **Conference Proposals** – Support for the organization of conferences, workshops, or symposia that advance scientific knowledge and networking.
- **Equipment Proposals** – Funding to purchase major equipment for research that benefits multiple investigators or projects.
- **Travel Proposals** – Support for travel related to research collaboration, training, or dissemination of research findings.
- **Center and Research Infrastructure Proposals** – Large-scale proposals to establish research centers, facilities, or infrastructure that supports multiple research projects.
- **Fellowship Proposals** – Support for individual researchers or students to advance their training and career development.

6.4. Proposal Reviews

The overall NSF proposal review and funding order typically follows this sequence:

1. **Administrative review** – NSF staff check the proposal for completeness, compliance with solicitation requirements, and eligibility.
2. **Merit review** – Experts evaluate the scientific and technical merit of the proposal, usually using the two NSF review criteria: ***Intellectual Merit*** and ***Broader Impacts***.

   The **merit review process** generally follows this sequence:

   a. **Peer review** – External experts evaluate the proposal for ***Intellectual Merit*** and ***Broader Impacts*.**

   b. **Program Officer review** – The assigned NSF Program Officer considers the peer reviews, program priorities, the PI's research portfolio, geographic distribution, and other factors to recommends action.

   c. **Division Director review** – The Division Director provides the final approval and forwards recommendations for funding.

3. **Business (award) review** – After merit review approval, the proposal undergoes a business review, including budget analysis, compliance checks, and final approval for funding. This final review happens within the Division of Grants and Agreements (DGA).

While the Program Officers make recommendations, they cannot obligate any funds. Likewise, the Division Directors do not sign the grant agreements. Only the Grants and Agreements Officers, within DGA, are authorized to legally make an award, issue amendments, or otherwise obligate NSF funds.

6.5. Types of NSF Awards

The main award mechanisms used by NSF (and other federal agencies) are **Grants**, **Cooperative Agreements**, and **Contracts**.

6.5.1. Grants

Grants are financial assistance to support a specific research or education project. Characteristics of a Grant include:

- Investigator-initiated or solicited.
- Funding is provided directly to the recipient institution.
- Typical for standard research projects, training, or equipment acquisition.

6.5.1. Cooperative Agreements

Cooperative Agreements are a type of assistance award used when substantial involvement is anticipated between NSF and the recipient throughout the project. Characteristics of a Cooperative Agreement include:

- NSF actively collaborates with the recipient on project planning or execution.
- Often used for large-scale centers, infrastructure projects, or special initiatives.

6.5.1. Contracts

Contracts are used to acquire goods or services for the direct benefit of the federal government. Characteristics of a Contract include:

- NSF specifies deliverables and outcomes.
- More structured and prescriptive than grants or cooperative agreements.
- Typically used for research, evaluation, or technical support that directly benefits NSF programs.

6.6. Proposal Withdrawal or Declination

6.6.1. Withdrawal

A Principal Investigator (PI) or authorized individual from the organization's sponsored projects office may withdraw a proposal at any time before the cognizant NSF Program Officer makes a funding recommendation. Proposals must be electronically withdrawn via Research.gov. In cases where NSF has already made a funding decision, proposals will not be permitted to be withdrawn via the electronic proposal withdrawal system. For additional information, see PAPPG Chapter IV.A, Proposal Withdrawal.

6.6.2. Return without review

If the proposal does not adhere to the instructions in the PAPPG (or the program solicitation, if applicable), NSF may not accept a proposal or may return it without review. There are ten reasons for returning a proposal without review. See PAPPG Chapter IV.B, Proposals Not Accepted or Returned Without Review for the complete list of reasons.

6.6.3. Declination

A PI whose proposal for NSF support has been declined will receive information and an explanation of the reason(s) for declination along with copies of the reviews considered in making the decision. If that explanation does not satisfy the PI, they may request additional information from the cognizant NSF Program Officer or Division Director. See Step 7, Division Director Review of Recommendation, for information released electronically to the PI.

6.6.4. Reconsideration

A PI whose proposal for NSF support has been declined will receive information and an explanation of the reason(s) for declination. The PI will also receive copies of the reviews that were considered in making the decision. If that explanation does not satisfy the PI, he/she may pursue other avenues to have the decision reconsidered. See PAPPG Chapter IV.D, Reconsideration.

6.7. Summary

For the past 75 years, NSF funding has resulted in major scientific breakthroughs and kept the U.S. at the forefront of research across the world. NSF's mission includes not only to advance research directly, but also to train a diverse cadre of highly talented workers who will keep the U.S. at the forefronts of research.

NSF's research is organized into eight (8) directorates and is provided via various grant mechanisms. NSF summarizes its grant-making and grant-management rules in NSF Proposal & Award Policies & Procedures Guide (PAPPG), a great resource for the principal investigators and all grant management staff.

6.8. Practice Questions

1. NSF was founded in _____ to strengthen the scientific position of the U.S. for rivalry with the _____.
    a. 1801, British
    b. 1935, Germans after WWI
    c. 1950, with the Soviet Union
    d. 1990, with the Chinese

2. NSF's mission is to support basic science in all fields, EXCEPT:
    a. Mathematics
    b. Engineering
    c. Medicine
    d. Geosciences

3. NSF is:
    a. An independent agency.
    b. Under the Department of Commerce.
    c. Under the Department of Defense.
    d. Under the Department of Education.

4. Who was the main figure behind establishing the NSF?
    a. Albert Einstein
    b. J Robert Oppenheimer
    c. Vannevar Bush
    d. James Watson

5. NSF's budget in 2025 was approximately _____ billion dollars per year.
    a. 2
    b. 5
    c. 7
    d. 10

6. NSF receives approximately ____ thousand proposals per year, of which approximately ____ thousand are funded.

a. 20, 5
b. 40, 10
c. 80, 20
d. 100, 25

7. Out of approximately every _____ proposals submitted to the NSF, one is ultimately funded.
    a. 1.5
    b. 2.5
    c. 3.5
    d. 4.0

8. Which of the following is NOT a major goal of the NSF?
    a. STEM talent development
    b. Creating new knowledge
    c. Translating knowledge into solutions
    d. Enhancing funding for arts and humanities

9. Which of the following shows the organizational structure of NSF, from the largest to the smallest?
    a. Directorate, Division, Section, Program
    b. Directorate, Section, Program, Division
    c. Division, Section, Program, Directorate
    d. Division, Program, Section, Directorate

10. Which of the following is NOT one of the NSF's directorates?
    a. Biological sciences
    b. Engineering
    c. Social, behavioral, and economic sciences
    d. Epidemiology and health sciences

11. The NSF Division of Integrative Organismal Systems is within the Directorate for:
    a. Biological Sciences
    b. Engineering
    c. Computer & Information Science & Engineering
    d. Geosciences

12. The Division of Materials Research is within the Directorate for:
    a. Biological Sciences
    b. Mathematical and Physical Sciences
    c. Geosciences
    d. Technology, Innovation, and Partnerships

13. Proposal review and processing at NSF takes approximately an average of ___ months.
    a. 1
    b. 3
    c. 8
    d. 14

14. Which of the following is the overall order of a proposal funded by the NSF?
    a. Merit, administrative, business
    b. Administrative, merit, business
    c. Business, administrative, merit
    d. Merit, business, administrative

15. Which of the following correctly shows the order of merit review at the NSF?
    a. Peers, program officer, Division Director
    b. Program officer, peers, Division Director
    c. Program officer, Division Director, peers
    d. Division Director, program officer, peers

16. All of the following may result in a proposal submitted to the NSF being returned without review, EXCEPT:
    a. The proposal is almost identical to one that is already funded.
    b. The proposal does not make a strong case for its broader impacts.
    c. Some of the required sections are missing.
    d. Submission is after the deadline.

17. What are the two main criteria for NSF proposal reviews?
    a. Intellectual merit, broader impacts
    b. Intellectual merit, approach
    c. Approach, broader impacts
    d. Innovation, approach

18. All of the following are correct about program officers at NSF, EXCEPT:
    a. Are subject matter experts.
    b. Review the proposal for merit.
    c. Make the final decision about funding a proposal.
    d. May be rotators at NSF, for one or two years.

19. The NSF program officer considers the following when recommending a proposal for funding:
    a. How well the peers scored the proposal.
    b. How transformative the research is.
    c. What the general portfolio looks like.
    d. All of the above.

20. Which of the following may impact the decision for funding at NSF?
    a. Geographic distribution
    b. Potential impact on human resource development
    c. Different approaches to the same question
    d. All of the above

21. Which of the following is used to submit grant application to the NSF?
    a. eRA Commons
    b. ProposalCentral
    c. Research.Gov
    d. JustGrants

22. The book that summarizes most of NSF grant submission and grant management rules is abbreviated as:
    a. GPS
    b. PAPPG
    c. CFR
    d. IRNSF

23. Which of the following parts of a proposal is most likely to be revised if a funding decision is likely and imminent?
    a. Project summary
    b. Project description
    c. Biographical sketch
    d. Current and pending support

24. Biographical sketches for NSF grants in 2025 were prepared using _____ and page numbers were _____ .
    a. ORCID, limited to 3
    b. SciENcv, limited to 3
    c. ORCID, not limited
    d. SciENcv, not limited

25. Each budget justification for NSF grants is typically limited to ___ pages.
    a. 2
    b. 5
    c. 8
    d. 12

26. NSF's 2-month salary rule applies to:
    a. Senior personnel
    b. Technicians
    c. Postdocs
    d. All of the above

27. In NSF language, senior personnel include:
    a. Principal investigators only
    b. Principal investigators and faculty associates
    c. Faculty associates and postdoctoral fellows
    d. Faculty associates only

28. NSF's 2-month salary rule is for:
    a. Each NSF-funded project
    b. All NSF-funded awards combined
    c. Summer funding only
    d. Academic year funding only

29. NSF sometimes uses "target date" for a submission. That is the date beyond which the proposal:
    a. Will not be reviewed.
    b. Will be given to the next convened panel.
    c. Score is reduced by 10%.
    d. Will be sent to another agency for review.

30. After an NSF grant application is funded, the following needs prior approval from the NSF:
    a. Rebudgeting to be paid more than 2 months
    b. Purchasing more supplies than initially planned
    c. Increasing the percentage time of the technician
    d. Transferring funds from participant costs to equipment

31. Which of the following is NOT correct about “current and pending support” for submissions to the NSF?
    a. Must include all projects that need time commitment, even if the time commitment is in-kind
    b. Must include the time commitment for the proposal under submission
    c. Must be provided for all key/senior personnel
    d. Must be prepared using SciENcv

32. When submitting to the NSF, all of the following are correct about collaborative proposals, EXCEPT:
    a. Are generally allowable.
    b. May be submitted by one institution, with subawards included in the submission.
    c. May be submitted by several institutions, with the complete proposal submitted by the lead organization and certain documents by each of the other institutions.
    d. May be submitted if there are at least three (3) participating organizations.

33. A major epidemic (such as Covid-19) happens. The Department of Computer Sciences want to expeditiously find ways to use voice recognition for early identification of Covid-19 cases. The most appropriate NSF mechanism to fund such a project is:
    a. Standard
    b. EAGER
    c. RAPID
    d. RAISE

34. NSF REU awards are to create research opportunities for:
    a. Undergraduate students
    b. Upstart companies
    c. Unemployed, former faculty members
    d. Ultra high-caliber faculty members

35. NSF CAREER awards are primarily for:
    a. Established faculty members with outstanding careers.
    b. Postdoctoral fellows seeking a career as a faculty member.
    c. Early career faculty members who have the potential to become role models in the future.
    d. Faculty who have been research productive for at least 20 years but now decide to change the course of their career by taking on a new field.

36. Which of the following NSF grants is primarily intended for high-risk, high-reward projects?
    a. Standard
    b. Planning
    c. EAGER
    d. HBCU-UP

37. Which of the following types of NSF grants undergo external merit review?
    a. Standard
    b. Planning
    c. RAPID
    d. EAGER

38. Which of the following NSF mechanisms is primarily intended for interdisciplinary grants with major funding?
    a. RAPID
    b. EAGER
    c. RAISE
    d. Planning

39. Which of the following NSF mechanisms allow for longer periods of performance?
    a. RAPID
    b. EAGER
    c. RAISE
    d. Planning

40. Which of the following NSF awards is intended to increase the participation of scientists with disabilities in research by special equipment and assistance?
    a. GOALI
    b. FASED
    c. EAGER
    d. RAISE

41. NSF provides funds for which of the following types of proposals?
    a. Equipment proposals
    b. Conference proposals
    c. Center proposals
    d. All of the above

42. Which of the following NSF grants is primarily intended for historically black colleges and universities?
    a. EAGER
    b. EiR
    c. GOALI
    d. MRI

43. Which of the following is NOT a mechanism included in the NSF HBCU-UP family of grants?
    a. Targeted Infusion Projects (TIP)
    b. Broadening Participation Research (BPR)
    c. Major Research Instrumentation (MRI)
    d. Research Initiation Awards (RIA)

44. Which of the following is NOT correct about cooperative agreements between a university and the NSF? Cooperative agreements:
    a. Are suitable for the management of large research centers.
    b. Are suitable for developing multi-user facilities.
    c. Can be unilaterally suspended or terminated by the NSF, when in the best interest of NSF.
    d. Are suitable primarily for short-term projects with low small amount of funding.

45. Which of the following does the NSF use for procuring audit services?
    a. Grants, EAGER
    b. Grants, RAISE
    c. Cooperative agreements
    d. Contracts

46. Which of the following is used to guide NSF contracts?
    a. Guide to NSF Contracting Process
    b. NSF PAPPG
    c. Bayh-Dole Act
    d. NSF GOALI

47. For most grants, acceptance of the grant is official when the non-federal entity's:
    a. President signs the letter of acceptance.
    b. VP for Research signs the letter of acceptance.
    c. Authorized Organizational Representative signs the letter of acceptance.
    d. Authorized person draws down funds.

48. The first no-cost extension for any NSF award is:
    a. Negotiated between the PI and the NSF PO.
    b. Negotiated between the AOR and the NSF PO.
    c. Automatic but must be submitted via the NSF electronic systems.
    d. Granted only if no more than 10% of the funds are remaining.

49. The second no-cost extension needs:
    a. A strong justification for why the research has not been able to complete the work
    b. An estimate of the unobligated funds
    c. A plan to complete the study
    d. All of the above

50. Which of the following does NOT need prior approval from the NSF?
    a. Change of scope
    b. Change of PI

c. Transferring funds from travel line to supplies line
d. Transfer of the grant to another organization

51. Which of the following does NOT need NSF prior approval?
    a. Change of co-PI
    b. The first no-cost extension
    c. Adding a subaward recipient
    d. Transferring funds from the participant costs to another budget line

52. NSF requires that the non-federal entity receiving grants have all of the following standards EXCEPT:
    a. Procurement standards
    b. Property control standards
    c. Conflict of interest policies
    d. Publication standards

6.9. Answers to Practice Questions

1. C NSF was founded in 1950, after World War II (WWII). During the War, the U.S. benefitted substantially from military advancements that were clearly attributable to science. Examples included the atomic bomb, radar, mass production of penicillin, and antimalarial drugs. Vannevar Bush, who headed the Office of Scientific Research and Development (OSRD) during WWII, convinced the U.S. government to establish the NSF to maintain the scientific ascendancy of the U.S. in the world. The main competitor, at the time, was the Soviet Union.

2. C While NSF was initially established to support all sciences, it does not support science in the fields of medicine and public health. This is mostly because the National Institutes of Health (NIH) has substantial funding for medicine and public health, obviating the need for NSF support in these areas.

3. A NSF is not under any department. Other examples of independent agencies include the National Aeronautics and Space Administration (NASA), Environmental Protection Agency (EPA), and the Nuclear Regulatory Commission (NRC).

4. C Vannevar Bush, who headed the U.S. Office of Scientific Research and Development (OSRD) during World War II, was the main force behind establishing the NSF. His famous 1945 report to President Roosevelt, entitled "Science – The Endless Frontier" is still quoted today.

5. D While $10 billion is not a small number, it is substantially smaller than NIH's budget of approximately $50 billion. This is part of the reason that NSF does not fund research in the areas of medicine and public health.

6. B Approximately 10K of 40K submitted proposals are funded. That is a rate of almost 25%.

7. B While the acceptance rate is slightly over 25%, because proposals are refined and later resubmitted, approximately 40% will "eventually" be funded. That is 1 out of 2.5. The lesson is that proposals have a reasonably high rate of acceptance. Well-written, innovative proposals will be eventually funded.

8. D The first three are major goals of NSF. The last one is left to other funding agencies such as the National Endowment for Arts (NEA) or National Endowment for Humanities (NEH).

9. A NSF has several directorates, such as Directorate for Engineering (ENG). Within ENG, there are several divisions, such as Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET), Division of Civil, Mechanical, and Manufacturing Innovation (CMMI), and Division of Electrical, Communications, and Cyber Systems (ECCS).

10. D BIO, ENG, and SBE are all directorates within NSF. However, epidemiology is part of public health and is not funded by the NSF.

11. A

12. B

13. C While the timing is variable, it is reasonable to assume an average of 8 months. There are administrative reviews, scientific reviews, and final business reviews.

14. B Submitted proposals first undergo an administrative review, to ensure completeness of the package and consistency with submission requirements (such as page numbers and fonts). If they pass this stage, proposals are then reviewed for scientific merit. If they are scientifically meritorious, the proposals will undergo a business review to ensure that the PI or the submitting agency are not debarred, budgets are reasonable, costs are allowable, etc.

15. A While peers review the proposal, additional reviews will be done by the Program Officer and the Division Director, to ensure not only scientific merit, but also for the overall fit of the proposal, reducing duplications in funding of similar projects, and completeness of portfolio of the division.

16. B Reviewing broader impact is done during merit review. So, even if the proposal has not done a remarkable job for making a case for broader impact, it will not immediately disqualify the proposal from being reviewed.

17. A

18. C NSF Program Officers are subject matter experts. They do review the proposals, and they may be temporarily assigned to the NSF (rotators) for a few years. But they do not make the final decision regarding funding; they can only make recommendations.

19. D

20. D Questions 19 and 20 illustrate the fact that scientific merit is not the sole factor in deciding which proposal should be funded. There are several other factors.

21. C eRA Commons is for NIH. ProposalCentral is for foundations. JustGrants is for the Department of Justice.

22. B PAPPG: Proposal & Award Policies and Procedures Guide.

23. D When a funding decision is imminent, the Current and Pending Support section is often updated to reflect the most recent funding commitments, effort allocations, and any changes to other active projects. This ensures that the funding agency has an accurate picture of the investigator's existing obligations and can make informed decisions regarding overlap, effort, and compliance with award limits.

24. D Since October 2020, NSF mandated that all biosketches be prepared using SciENcv (Science Experts Network Curriculum Vitae). The number of pages was initially limited to 2 pages and later changed to 3 pages. Since October 2024, this page limit was removed.

25. B There is a firm 5-page limit.

26. A NSF has had a long-standing rule that it pays up to only two months of salary for key personnel in one year. This is for all NSF awards combined. The origins of this rule date back to 1970s, when Congress got concerned about faculty's potential abuse of summer funds. The thought was that faculty are supported by their institution for 9 months during the academic year. During the 3

months of summer, one reasonably takes off one month and works the other 2 months. NSF accepts exceptions with justifications. This rule does not apply to technicians, postdoctoral fellows, or graduate students who may not be otherwise supported by their institution.

27. B

28. B

29. B NSF “target date” means proposals received after that date may still be accepted and reviewed, but review may be deferred to the next review cycle/panel.

30. D Per Uniform Guidance, any transfer of funds from participant support costs to other budget lines requires prior approval. Interestingly, while the NSF does not allow for more than 2 months of salary, after the grant is funded, transferring budget from other lines to salary can be done without prior approval.

31. D It is the biosketch that is prepared using SciENcv.

32. D There is no requirement for at least three participating organizations. A collaboration can involve just two institutions.

33. C This is an emergency, and we cannot wait for several months for the study to start. Therefore, RAPID is the best mechanism.

34. A REU stands for Research Experiences for Undergraduates.

35. C

36. C

37. A Standard grants undergo external merit review. The other ones listed here are reviewed internally by NSF Program Officers.

38. C RAISE (Research Advanced by Interdisciplinary Science and Engineering): Supports bold, interdisciplinary projects not suitable for regular NSF programs.

39. D Planning proposals (for example, for Centers or major initiatives) are specifically intended to allow for longer periods of performance, often beyond the short horizons of RAPID or EAGER, in order to prepare for larger future submissions.

40. B FASED (Facilitation Awards for Scientists and Engineers with Disabilities): Designed to increase the participation of scientists and engineers with disabilities by providing funding for special equipment, assistance, or other accommodations needed to conduct research.

41. D

42. B NSF EiR (Excellence in Research) is primarily for historically black colleges and universities (HBCUs).

43. C

44. D Cooperative agreements are a type of financial assistance award in which the federal funding agency has a major involvement in running the award. The federal government typically gets involved more closely when the project is long-term and has many centers involved, not when the project is small and short-term.

45. D Contracts are the main vehicle by which the federal government procures goods or services. In this case, audit is a service that needs to be procured. It is not assistance, hence the answer cannot be a grant or a cooperative agreement.

46. A

47. D Acceptance of most grants does not require a signature. The terms of the grant are agreed upon by simply drawing down funds.

48. C

49. D

50. C

51. B The first no-cost extension for NSF projects does not need prior approval. Any no-cost extension thereafter does.

52. D