Discovery Research PreK-12

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Discovery Research PreK-12 Program

Current Solicitation:
NSF 20-572

Submission deadline:
06 Oct 2021

All proposals must be submitted using Research.gov or Grants.gov

The DRK-12 program seeks to significantly enhance the learning and teaching of science, technology, engineering, mathematics and computer science (STEM) by preK-12 students and teachers, through research and development of STEM education innovations and approaches.

Overview of the Session

- Describe NSF Policies and Procedures
- Describe the DRK-12 Program & Project Expectations
- Proposal Preparation and Review Process
- Further Information and Resources
- Final Questions

NSF Policies and Procedures

Proposal and Awards Policies and Procedures Guide (PAPPG)

- Updated annually, so attend to the one that is in effect at the time of submission.
- Sets all policy for submitting proposals to NSF. Solicitation supersedes the PAPPG.

NSF 22-1 becomes effective October 4, 2021

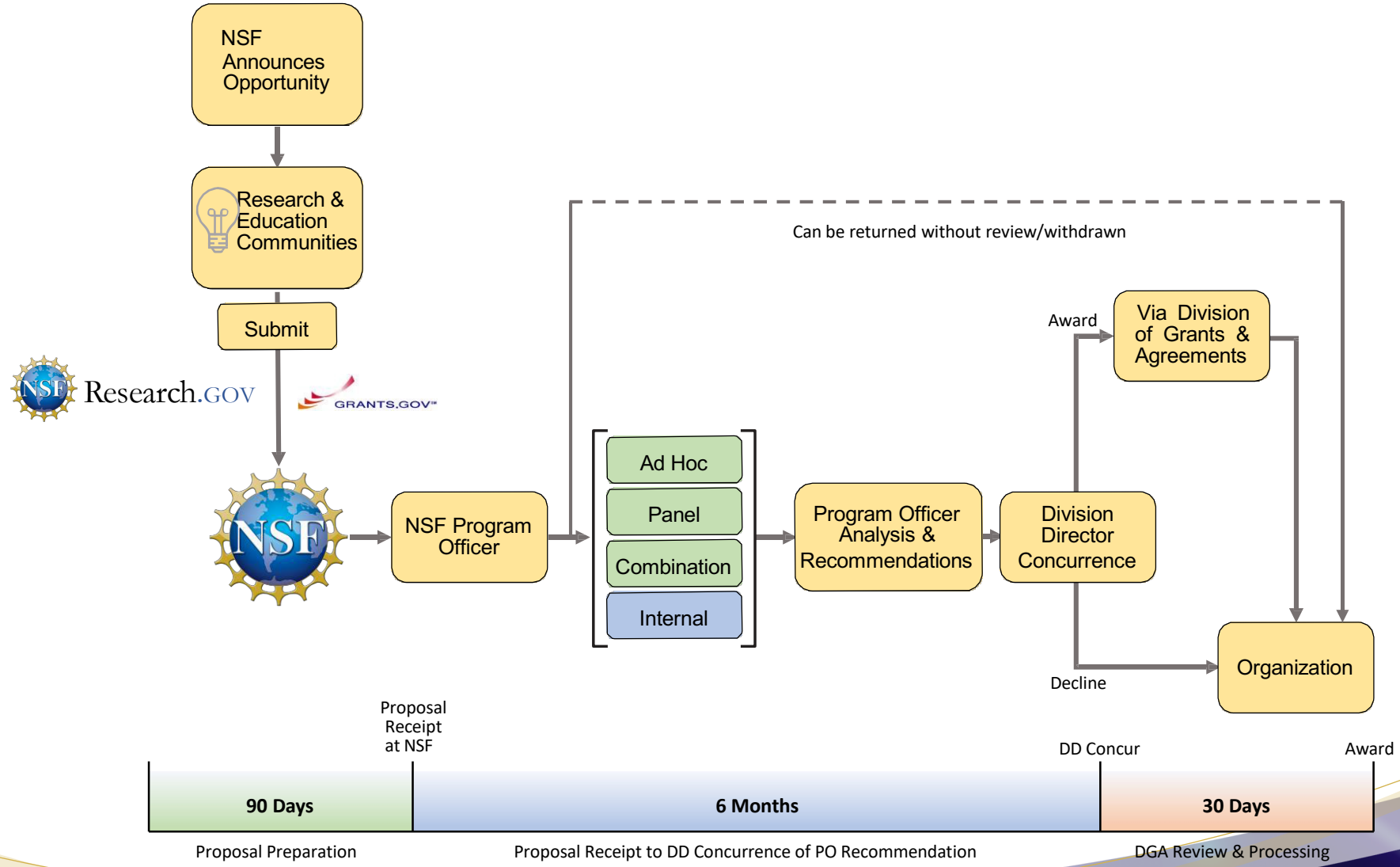
How to submit

- DRK-12 now requires the use of:
  - Research.gov
  - Grants.gov
- Submissions via Fastlane ***will no longer be accepted.***

NSF as a Funding Agency

- Field-driven funder
- DRL funds STEM education in any area of science and/or engineering supported by the agency
- Program Directors are part of the decision-making process, so can only give limited feedback to PIs

Proposal Review Process and Timeline



Eligibility
(Ch. 1 of PAPPG)

- Any organization is eligible to apply. Individuals cannot apply for DRK-12 funding.
  - Must be registered in the SAM.gov system
- Must demonstrate acceptable accounting mechanisms in place to be recommended for funding.
    - Prospective new awardee guide https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pnag
    - Pre-award reviews http://www.nsf.gov/bfa/dias/caar/index.jsp
    - Federal requirements for awards http://www.nsf.gov/bfa/dias/caar/fed.jsp

Dear Colleague Letters

- ***Not*** new funding opportunities
- Call the field's attention to existing funding opportunities that will accept proposals in an area
- Example:
  - Dear Colleague Letter: Advancing Quantum Education and Workforce Development **(NSF 21-033)**

Other DRL-based programs

- Advancing Informal STEM Learning (AISL)
- EHR Core Research (ECR)
- Innovative Technology Experiences for Students and Teachers (ITEST)
- Computer Science for All (CSforAll)
- Research on Emerging Technologies for Teaching and Learning (RETTL)
- Racial Equity in STEM Education (EHR Racial Equity)

Goal of the DRK-12 Program

Catalyze research and development of (STEM) education innovations or approaches that can serve as models for use by the nation's formal STEM education infrastructure (e.g., schools, districts, states, teachers).

DRK-12 Funded Projects

You can find examples of DRK-12 funded projects that will give a sense of what is fundable and their outcomes at the DRK-12 webpage.
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=500047

Discovery Research PreK-12 Program

- Current Solicitation: NSF 20-572 (same as last year)
- Submission deadline: 06 Oct 2021
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Anatomy of the DRK-12 Program

- STEM education focus
- Formal (classroom) educational settings

Strand

- Assessment
- Teaching
- Learning

Project Type

- Exploratory
- Design & Development
- Impact
- Implementation & Improvement
- Synthesis
- Conference

Funding Level

- I: $450,000, 3 years
- II: $3,000,000, 4 years
- III: $5,000,000, 5 years
- Syn: $600,000, 3 years
- Con: $100,000, 1 year

Solicitation highlights
Changes from the prior solicitation

- Clarifications
  - Design & Development Expectations
  - Impact Project type
- Commitment, interest, and focal areas
  - early childhood STEM
  - computer science
  - computational thinking
- Synthesis proposals: up to $600,000, 3 years

Solicitation Highlights
Design and Development

Goals

- specify the practical problem the project intends to address;
- justify the importance of the problem;
- describe how your idea differs from existing practice
- why your ideas are likely to lead to improvements in practice, teaching, learning, etc…

Theory

- strong theoretical and empirical justification for the proposed approach;
- compelling rationale for how features/components are expected to achieve intended outcomes
- include a well-explicated theory of change or logic model

Solicitation Highlights
Design and Development

Methods

- the methods for developing the innovation to the point where it can be used (the iterative development process);
- methods for collecting evidence related to feasibility;
- methods for obtaining pilot data on the promise for achieving the expected outcome.

Stage (early vs. late)

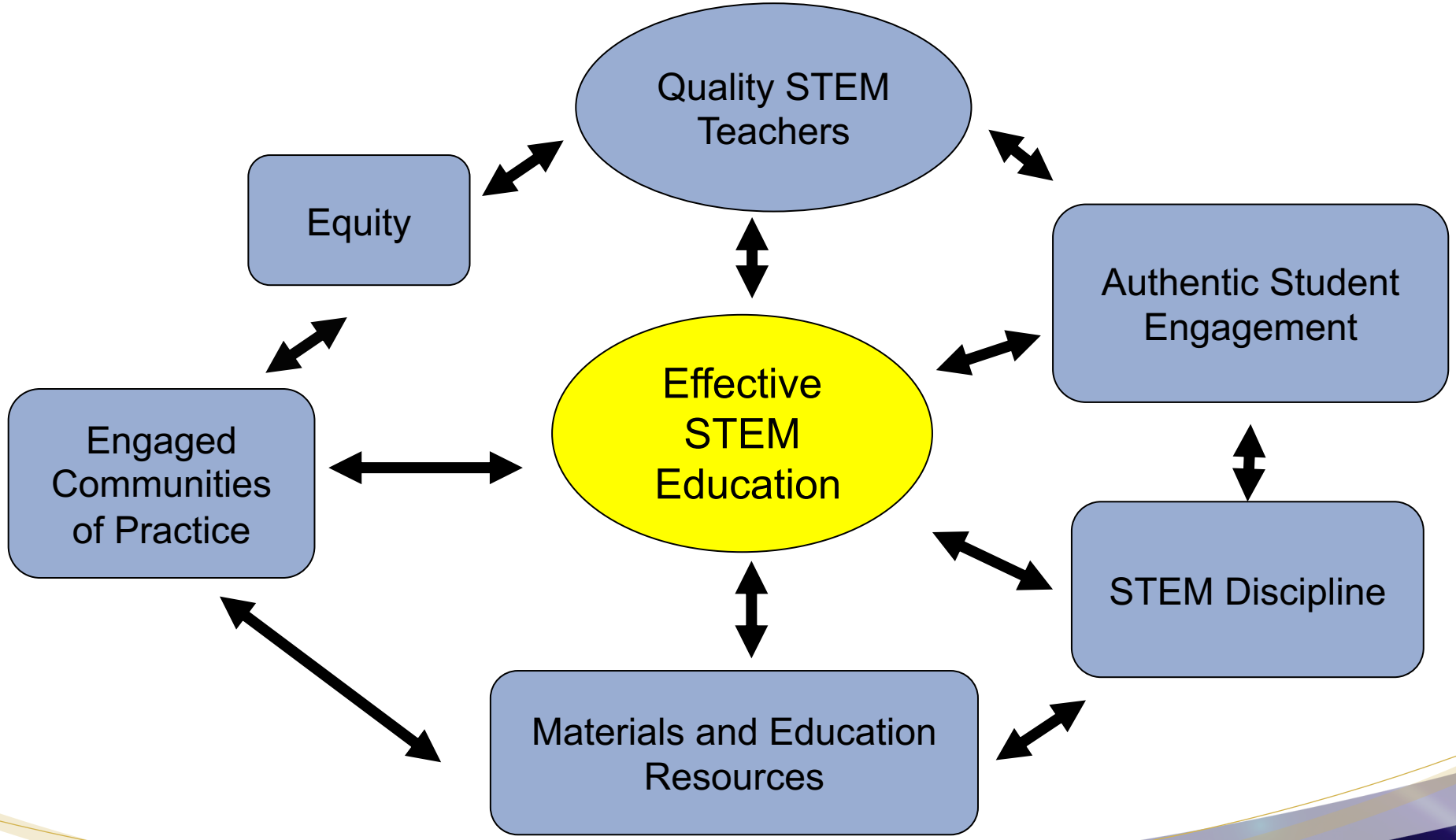
- Both types must be clear on the iterative development process described previously;
- If there is an existing early version/prototype, then it is likely a Late Stage proposal;
- Late stage proposals should provide estimates of effect sizes (by the end of the project).

Solicitation Highlights
Impact and Synthesis projects

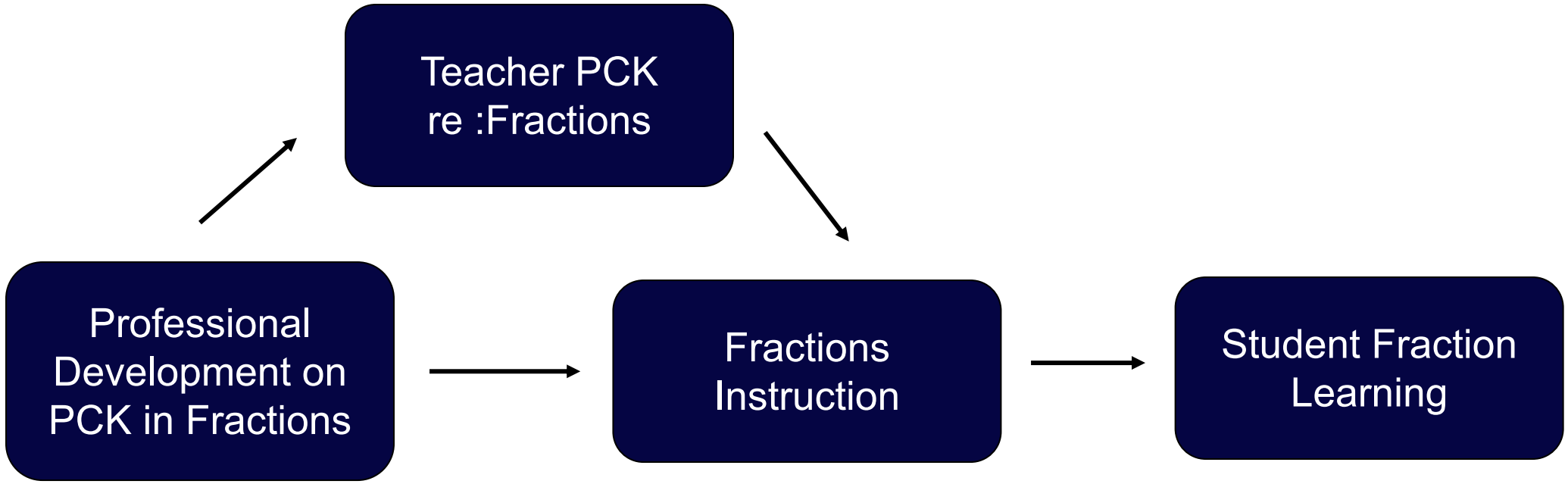
Impact and Synthesis Projects

- New DRK-12 solicitation is much more detailed with respect to submitting Impact projects. Please attend carefully to the design and methodological specifications in the ‘Impact Studies’ section of the solicitation.
- New DRK-12 solicitation also more detailed with respect to expectations for Synthesis proposals. Please review carefully. Limits extended to $600K and three years.

Change model: wrong grain size



Change model: overly simplistic



Commitment, interest, and focal areas

- Areas of particular interest for funding
  - *Not limiting – projects across STEM will be considered*
- Projects involving these areas should still hew to the core DRK-12 mission
- Wondering about fit? Chat with a program officer.

Questions?

Proposal Preparation

- DRK-12 Solicitation: NSF 20-572
  (Section V. Proposal Preparation and Submission Instructions)
- Proposals must be prepared in accordance with the PAPPG:
  - NSF 20-1 is in effect before October 4, 2021
  - NSF 22-1 is in effect on or after October 4, 2021

Project Summary

- First Sentence
  - Type of Study: Exploratory, Design and Development (early/late), Impact, Implementation and Improvement, Conferences & Syntheses, Resource Network
  - Main strand addressed – Assessment, Learning, Teaching
- Second Sentence
  - STEM Discipline(s)
  - Grade or Age level(s) addressed
- Intellectual Merit and Broader Impacts
  - Must include separate statements on each of these two NSB criteria

Mechanisms to Assess Success

- A proposal must describe appropriate project-specific external review and feedback processes.
- The review might include an external review panel and/or advisory board or a third-party evaluator.
- The external critical review should be sufficiently independent and rigorous to influence the project's activities and improve the quality of its findings.
- Successful proposals will:
  - describe the expertise of the external reviewer(s);
  - explain how that expertise relates to the goals and objectives of the proposal; and,
  - specify how the PI will report and use results of the project's external, critical review process.

Supplementary Documents

- Brief letters of collaboration*
- List of personnel on the proposal
- Data Management Plan
- Post Doc Mentoring Plan

NO OTHER DOCUMENTS

**be careful not to include attachments to the letters*

Budget

- Should be consistent with level of work – you do not have to request the maximum!
- Two months salary: No more than two months of salary for senior personnel on all NSF grants unless justified

Biosketch and Current and Pending Support

PAPPG 20-1 and 22-1* includes new guidance on the format for these items and provides new templates to use.

Submissions that do not use the templates may be returned without review.

**biosketches can now be 3 pages under 22-1*

Reasons for Return Without Review

- Violation of formatting rules of the PAPPG (e.g., font, page length)
- Too similar to a previously submitted proposal
- Failure to address specifically intellectual merit and broader impact in the Project Summary
- Unauthorized documents/data in the appendix or supplementary document section
- No post doc plan if post docs are included in budget
- No data management plan

Proposal Review Process

Proposals are reviewed in panels composed of a range of external experts (e.g., educational researchers, content experts, teachers, developers)

Merit Review Elements

Intellectual Merit

Broader Impacts

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to:
   - Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
   - Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

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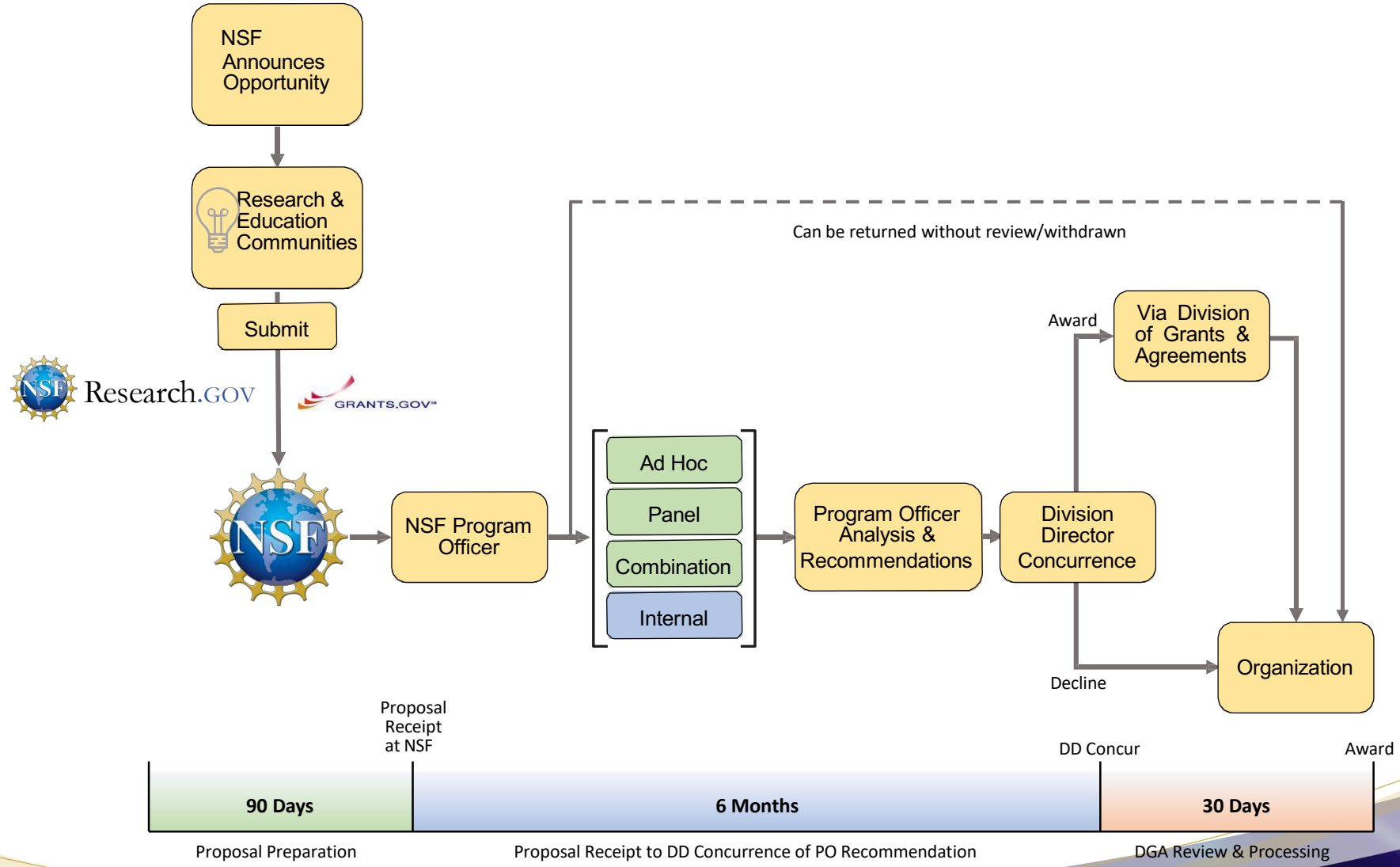

For Further Information

- Call 703-292-8620
- Email: DRLDRK12@nsf.gov
- Contact a DRK-12 Program Director

Questions?

Community for Advancing Discovery Research in Education

This webinar was hosted by CADRE, the resource network for the DRK-12 Program.

Webinar slides and recording will be posted to cadrek12.org and emailed to registered participants.

Resources of Interest:

- NSF Proposal Toolkit: http://cadrek12.org/resources/nsf-proposal-writing-resources
- Prior DRK-12 funded work: http://cadrek12.org/projects
- Recent DRK-12 publications: http://cadrek12.org/reading-list
- Spotlights on STEM topics: http://cadrek12.org/spotlights-stem-topics

Follow us: @cadrek12 | facebook.com/cadrek12 | LinkedIn
Questions? Email us at cadre@edc.org.
Good Luck!