

# Racial Equity in STEM Education Solicitation (NSF 22-634)

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Overview Webinar  
October 20, 2022



# Agenda

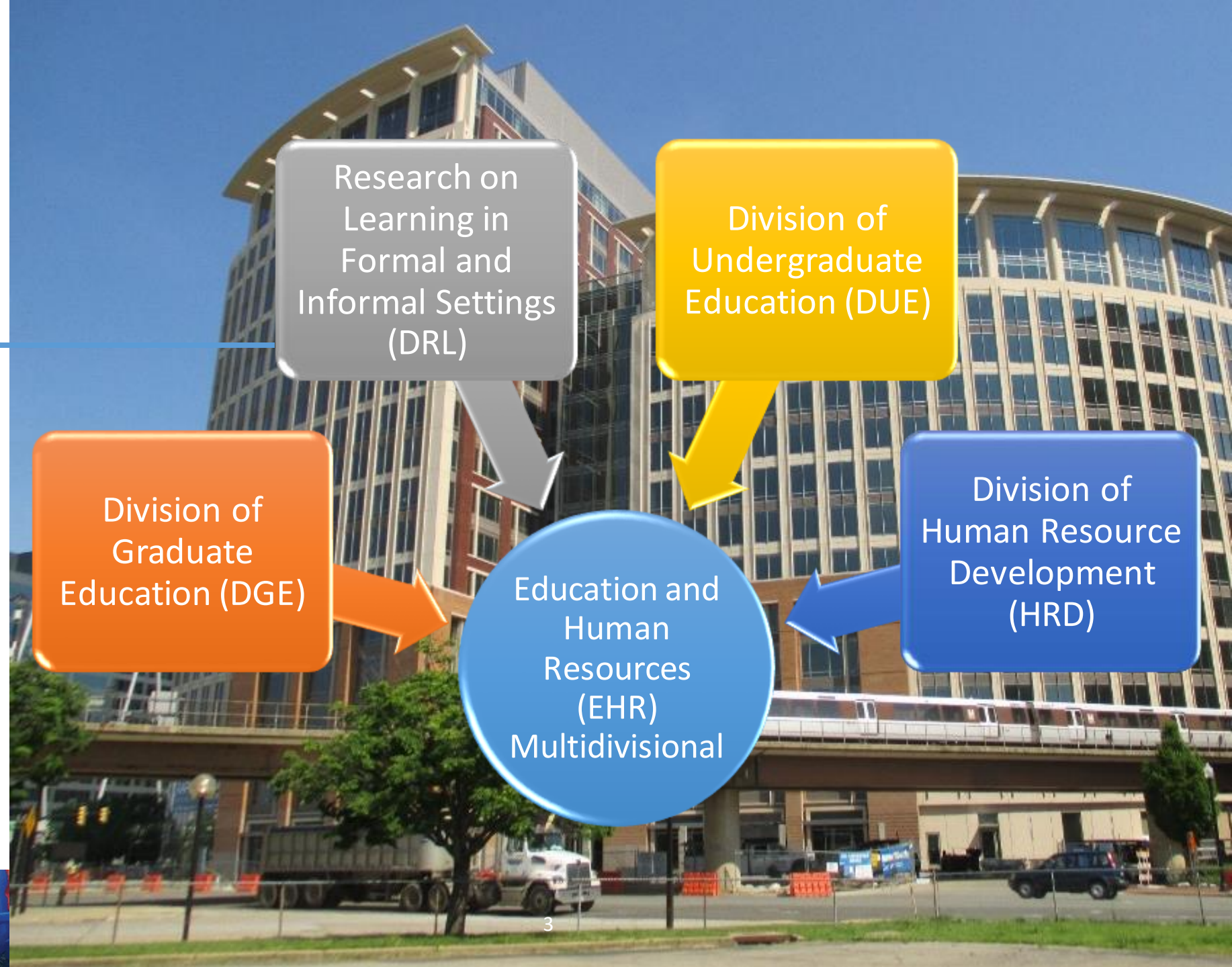
- Background and context for the solicitation
- Solicitation overview
- The nuts and bolts of submitting a proposal
- Q&A





## Education and Human Resources (EHR) Multidivisional

- Funding from programs across EHR
- Supports EHR's mission, which includes the development of a diverse and well-prepared STEM workforce "to enhance the quality of life of all citizens and the health, prosperity, welfare and security of the nation" (EHR mission statement)



# Education and Human Resources Directorate (EHR)

## Division of Graduate Education (DGE)

**Andrea Nixon**

**Narcisha Norman**

**Rochelle Craven**

## Division of Research on Learning in Formal & Informal Settings (DRL)

**Adrienne Dixon**

**Deena Khalil**

**Ellen McCallie (Co-Lead)**

**Toya Frank (Co-lead)**

**Sheryl Miller**

## Division of Undergraduate Education (DUE)

**Eric Sheppard**

**Kimberly Tanner**

**Patrice Waller**

**Michael Jugan**

## Division of Human Resource Development (HRD)

**Chrystal Smith**

**Robert (Bob) Mayes**

**Marilyn Suiter**

**Yevonda Mcilwaine**

**AAAS S&T Policy Fellow: Darren Agboh**

**Friends of EHR Racial Equity: Katie Schreyer, Liz Weber, & Sammi Staskiewicz**



# An Imperative for Addressing Systemic Racism and Racial Equity in STEM Education & Workforce Development via Research

- Studying racial equity is timely, valued, and needed.
- Connecting to and extending Broadening Participation (BP) aligns with NSF's Strategic Plan.
- Attracting new researchers & new ideas to NSF
- Recruiting a range of panelists and awardees with a range of expertise



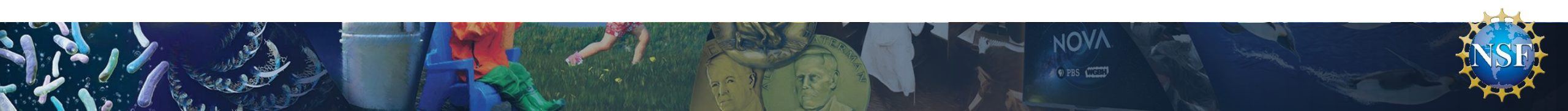
# Program Goals

1. Substantively contribute to institutionalizing effective research-based practices, policies, and outcomes in STEM environments for those who experience inequities caused by systemic racism and the broader community;
2. Advance scholarship and promote racial equity in STEM in ways that expand the array of epistemologies, perspectives, ideas, theoretical and methodological approaches that NSF funds; and
3. Further diversify project leadership (PIs and co-PIs) and institutions funded by NSF.



# EHR Racial Equity Program

- Support bold, groundbreaking, and potentially transformative projects that contribute to:
  - advancing racial equity in STEM education and workforce development
  - do so through practice and/or fundamental or applied research
- Projects may occur in any educational context and area of STEM that EHR supports, e.g.:
  - preK-12,
  - two-year and four-year undergraduate, and graduate institutions;
  - municipal organizations; STEM workplaces;
  - and informal STEM contexts, such as museums, community organizations, and media







# *Essential Components of the Racial Equity in STEM Education Solicitation (NSF 22-634)*

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# From Program Description (21-191Y) to Solicitation (22-634): What's New & Different?

## **Submission Deadline**

- January 17, 2023, 5pm local time of the submitting *institution*

## **Total maximum project budget**

- \$5M

## **Project duration**

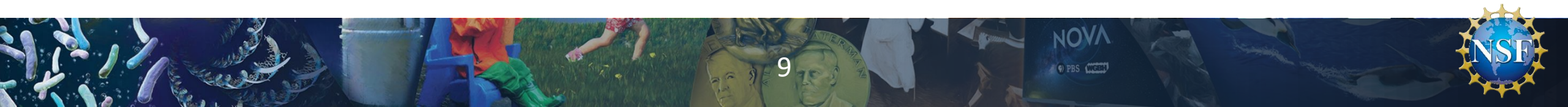
- Up to 5 years

## **Total program budget for FY23, with funding from across EHR programs**

- \$30M

## **Total expected number of awards**

- 15-35



# Solicitation Specific Criteria

1. How does the proposal conceptualize systemic racism with respect to the proposal topic or context? In what ways will the proposed work advance scholarship of racial equity and address systemic racism?
2. In what ways are the voices, knowledge, and experiences of those who experience inequities caused by systemic racism at the center of the project?
3. How is the project led by or in authentic partnership individuals and communities who experience inequities caused by systemic racism?

## Examples of Conceptualizing Systemic Racism from Recently-Awarded Projects

The overall goals of this project are twofold: to advance understanding of the system of privileges and advantages in engineering education and to create a professional development program to help engineering faculty develop the skills to critically question social, cultural, historical, and political effects of this privilege in engineering. **Engineering education is built on a system that historically privileges and normalizes the values, beliefs, experiences, and perspectives of particular identities that guide the work of the field. While there has been substantial research into the masculinity of engineering, there has been limited research about the role of privilege in engineering.** (2140646)

Conceptualizing a community-based model that enhances the recruitment, engagement, and transition to STEM teaching roles for Black male students while retaining and advancing Black male teachers is critical to addressing their significant and historically disproportionate representation in teaching careers. **The project explores systemic barriers that dissuade Black male students from pursuing STEM majors and takes a strength-focused approach to fostering a critical mass of Black male STEM teachers.** (2201904)



## Project Contexts

Subject areas may include all science, technology, engineering, mathematics, and all other domains currently supported by NSF as they relate to STEM Education.

Not all inclusive

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### Educational institutions

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PreK-12

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Two- & four-year undergraduate

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Graduate institutions

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### Municipal organizations

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### STEM workplaces

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### Informal STEM contexts

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Museums

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Community organizations

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Media

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### Other contexts

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# Centering People in the Project

- In what ways are the voices, knowledge, and experiences of those who experience inequities caused by systemic racism at the center of the project? Examples include:
  - Project leadership & research positions
  - Conceptualization of the proposal, decision-making processes
  - Data collection and project implementation
  - Interpretation & dissemination of results

# Leadership and Authentic Partnerships

- How is the project led by or in authentic partnership with individuals and communities who experience inequities caused by systemic racism? Examples include:
  - Clarity of positionality
  - Description of the research team
  - Description of how authentic partnership was formed
  - Budget considerations



# Research Scholarship Foci

- Build theory; develop research, evaluation, and assessment methods; conduct pilot projects and feasibility studies;
- Test approaches and interventions;
- Assess the potential, efficacy, effectiveness, and scalability of approaches and interventions;
- Change institutional, organizational, and structural practices and policies;
- Establish, cultivate, and assess authentic partnerships with communities impacted by systemic racism;
- Conduct syntheses, meta-syntheses, meta-analyses, and systematic literature reviews;
- Convene conferences that explore a theory, topic, method, or issue related to the program goals in order to drive research and practice forward; and/or
- Focus on affective, behavioral, cultural, social components, and implications.



# Methodological Approaches

	Methods	Analytic Process
Quantitative	<ul style="list-style-type: none"><li>• Surveys (behavioral, attitudinal)</li><li>• Statistical Modeling of Data &amp; Outcomes</li><li>• Disaggregating Data</li></ul>	<ul style="list-style-type: none"><li>• Descriptive Statistics</li><li>• T-tests/ANOVAs</li><li>• Multiple Regression</li><li>• Multiple Level Modeling</li></ul>
Qualitative	<ul style="list-style-type: none"><li>• Participatory Action Research (2)</li><li>• Interviews (semi-structured)</li><li>• Open-ended surveys</li><li>• Focus Groups</li><li>• Observations</li><li>• Reflective Journaling</li><li>• Audio Journaling</li><li>• Case Studies</li></ul>	<ul style="list-style-type: none"><li>• Thematic Analysis</li><li>• Document Analysis</li><li>• Interpretive Phenomenological Analysis (IPA)</li></ul>

# Considerations for Quantitative Approaches

- How questions are posed
- Data collection – How and why?
- Use of existing data sets
- Generating a new data set
- Contextualization and inferences on quantitative data





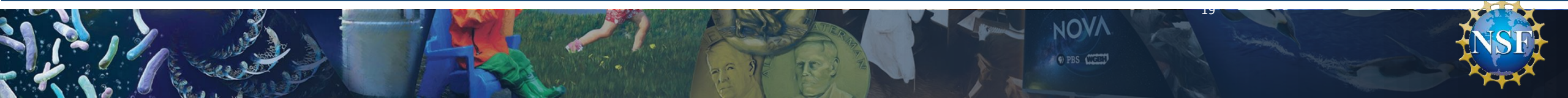
# Learning from last year's submissions

- Many proposing teams assume we'll figure out what they mean. It's safer to tell us explicitly in the proposal.
  - Framework for systemic racism—how is the proposal directly addressing systemic racism?
  - Who are the communities the team is working with?
  - Who are the partners? How was the team put together? Whose voices are part of the process, etc.?
- How is the project bold?
- How does the project contribute to scholarship with respect to racial equity &/or systemic racism in STEM?
- Many proposals are missing the expertise to enact the work. If the team is proposing educational research, social science research, or evaluation, who has that expertise/capacity?
- Educational/social science research &/or evaluation capacity
- *Budget Guidelines in PAPPG—a separate webinar with this focus is next week: Oct. 25.*
  - The short version: Does the budget align with the scope of work?



## *Nuts and Bolts:*

- Optional one-page concept paper
  - Submission details
  - Proposal Preparation
  - Proposal Timeline
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# Nuts and Bolts: Optional One Page Concept Paper

- If you would like feedback on a concept, email a one-page concept paper to [EHRRaceEquity@NSF.gov](mailto:EHRRaceEquity@NSF.gov)
- Be clear with respect to how your concept aligns with the Racial Equity in STEM Education Solicitation (NSF 22-634)
- To receive feedback before a deadline date, concept papers must be received at least **six weeks** prior to the submission deadline (December 1, 2022 for January 2023 competition)

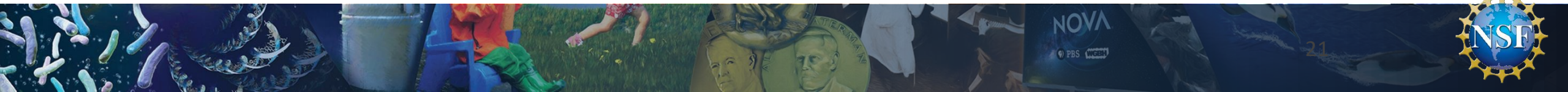






## Nuts and Bolts: Full Proposal Submission Deadline

- Next submission date – January 17, 2023
- Proposals can only be submitted using:  
[Research.gov](https://www.research.gov) or [Grants.gov](https://www.grants.gov)



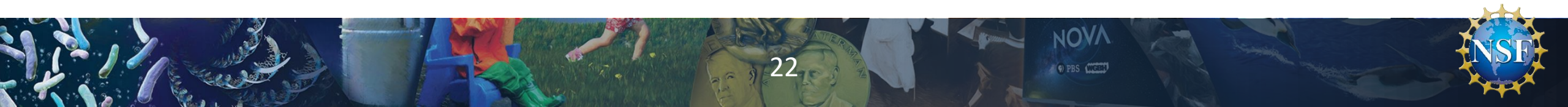
# NSF Merit Review Criteria: 2 Criteria

- **Intellectual Merit:**

- What new knowledge will this project create?

- **Broader Impacts:**

- What impact will this project have on society at large?





# NSF Merit Review Criteria: 5 Questions

1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields (**Intellectual Merit**); and
  - b. 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?





# Proposal Preparation: Solicitation-Specific Criteria\*

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2. In what ways are the voices, knowledge, and experiences of those who experience inequities caused by systemic racism at the center of the project?
3. How is the project led by or in authentic partnership individuals and communities who experience inequities caused by systemic racism?

*\*Reviewers will be required to address each of these questions in addition to the Intellectual Merit and Broader Impacts criteria. Make it easy for them to find the answers! Note that the solicitation prompts teams to include this information in their Project Summaries.*

# Proposal Preparation: Proposal Submission Content

Cover Sheet -- *Remember IRB (human subjects)*

Project Summary -- *Take at the solicitation to see what is required*

Table of Contents

Project Description (15 pp maximum) – *address the solicitation-specific criteria*

References Cited

Biographical Sketch(es)

Budget and Budget Justification -- *Join us for next week's budget webinar: Oct. 25*

Current and Pending Support -- *Use the [nsf.gov](https://www.nsf.gov) forms...see the website*

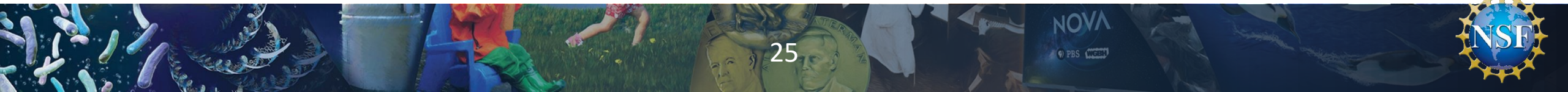
Facilities, Equipment and Other Resources

Special Information and Supplementary Documentation -- *Required!*

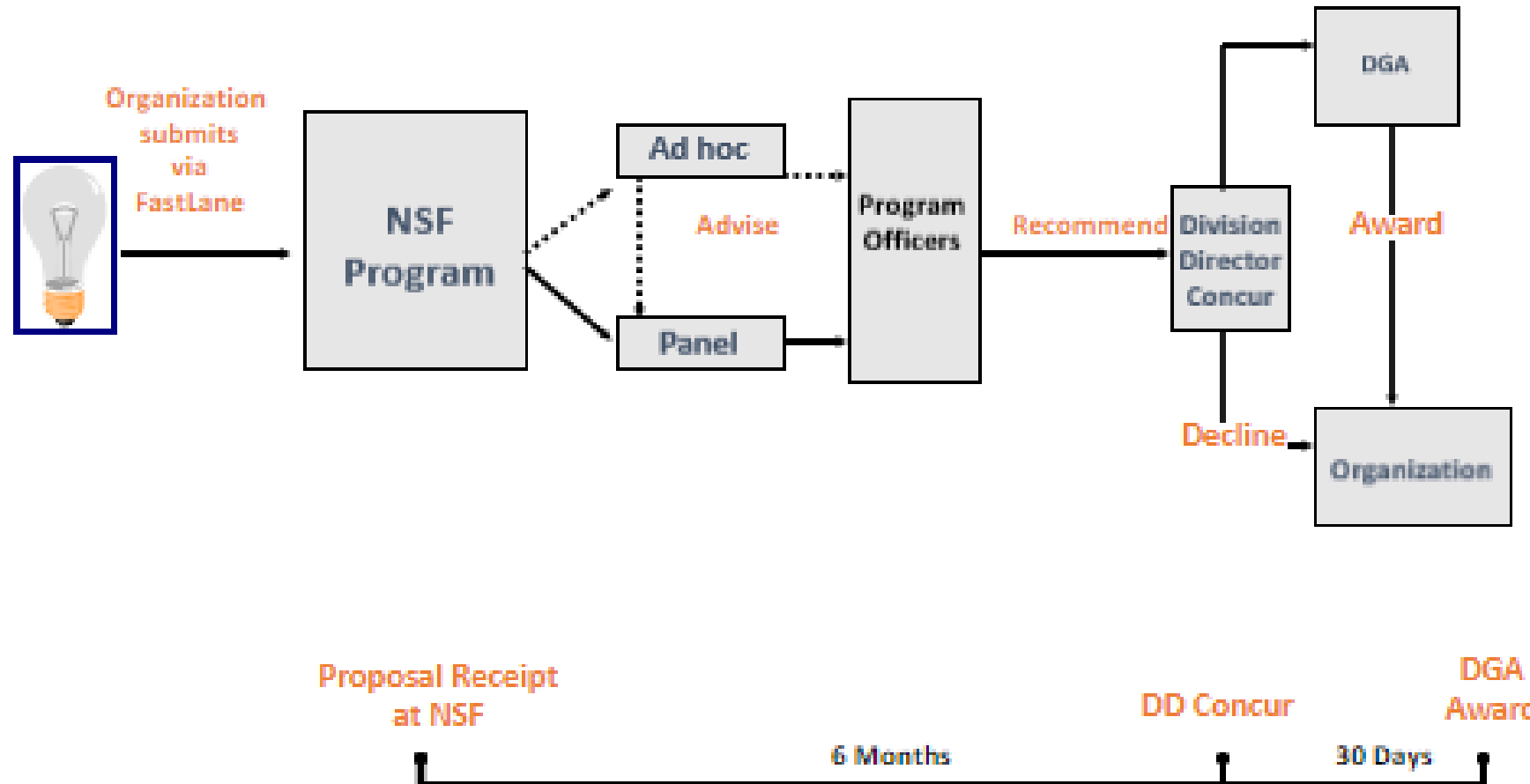
- Data Management Plan -- *See [nsf.gov](https://www.nsf.gov), search on "EHR Data Management Plan"*
- Postdoctoral Mentoring Plan (*required if a post-doc is included in the project*)

Single Copy Documents

- Collaborators & Other Affiliations Information
- Letters of Collaboration – *See the PAPPG, these are NOT letters of support*



# Proposal Review Process and Timeline





# General Resources

- Program Solicitation:
- <https://beta.nsf.gov/funding/opportunities/racial-equity-stem-education-ehr-racial-equity-0>
- NSF [Proposal & Award Preparation & Guidelines](#)
- Proposal review: [https://www.nsf.gov/bfa/dias/policy/merit\\_review/](https://www.nsf.gov/bfa/dias/policy/merit_review/)
- Training for submitting: See the webpages for the following:
  - Research.gov
  - Grants.gov, [Grants.gov Application Guide](#)
- Visit the **EHR Racial Equity webpage** for upcoming office hours information and announcements

# Contact Us

- **Email:** [EHRRaceEquity@nsf.gov](mailto:EHRRaceEquity@nsf.gov)
- Phone: 703-292-5009
- Website with up-to-date announcements:
- <https://beta.nsf.gov/funding/opportunities/racial-equity-stem-education-ehr-racial-equity-0>
- Webinar slides and recording
- **Serve as a reviewer:** Sign up on the EHR Racial Equity website (under Announcements and Updates) via our reviewer survey. It's a great way to learn as well.

Turn off recording  
&  
Start answering the Q&A Live

