



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

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Overview Webinar  
August 22nd, 2023

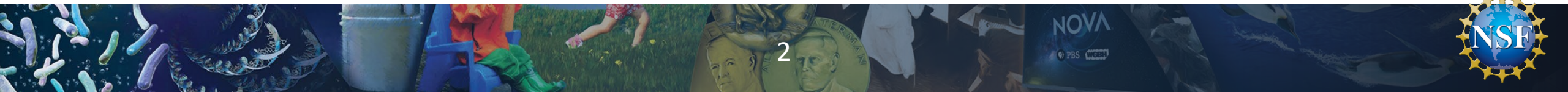
Toya Frank (co-lead), Chrystal Smith (co-lead),  
Sonal Dekhane





# Agenda

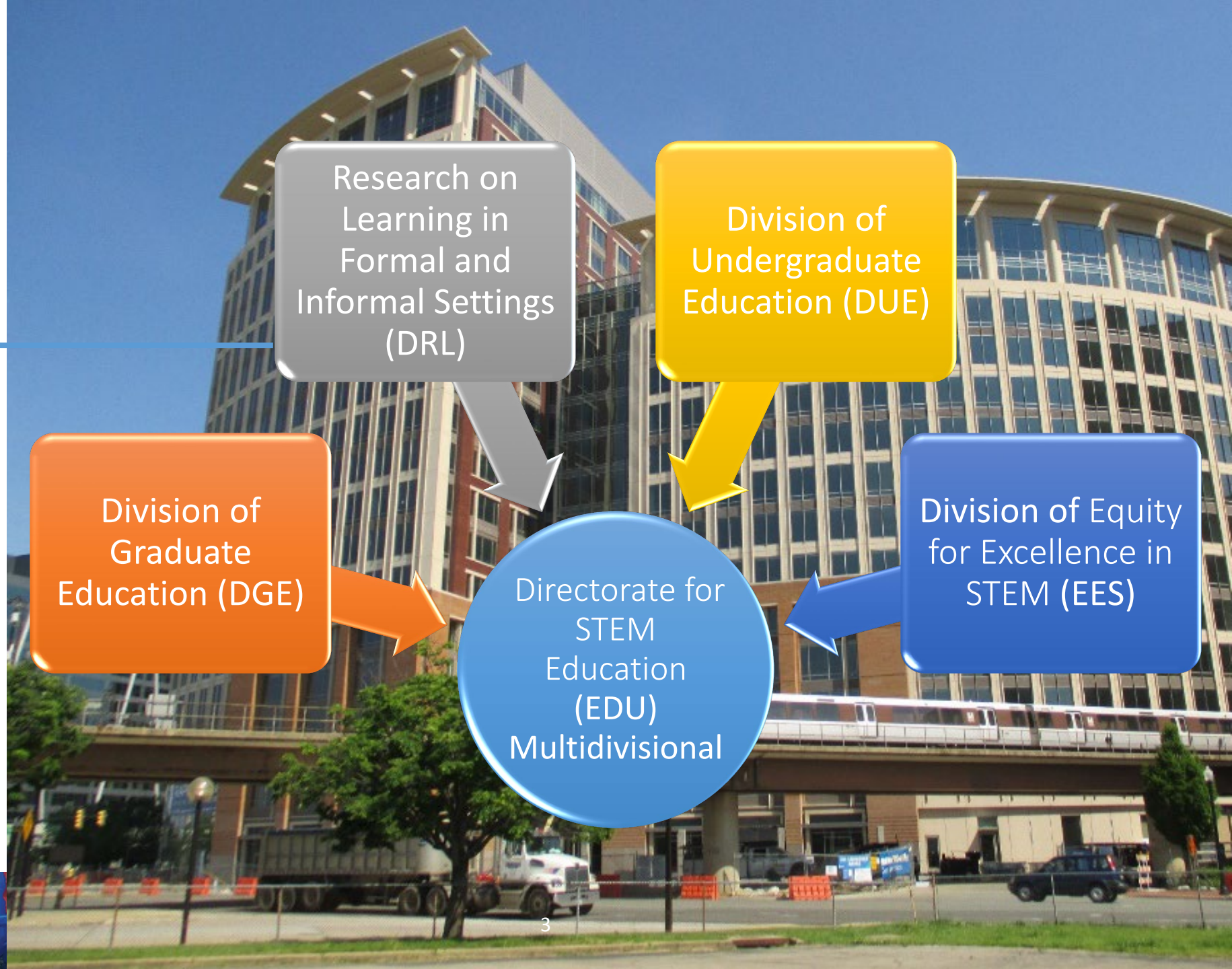
- Background and context for the solicitation
- Solicitation overview
- The nuts and bolts of submitting a proposal
- Q&A





## Directorate for STEM Education (EDU) Multidivisional

- Funding from programs across EDU
- Supports EDU'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" (EDU mission statement)



# Directorate for STEM Education (EDU)

Division of Graduate Education (DGE)

Andrea Nixon

Narcisha Norman

Rochelle Craven

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

Toya Frank (Co-lead)

Adrienne Dixson

Deena Khalil

Ellen McCallie

Kevin Clark

Sheryl Miller

Division of Undergraduate Education (DUE)

Kimberly Tanner

Patrice Waller

Michael Jugan

Division of Equity for Excellence in STEM (EES)

Chrystal Smith (Co-lead)

Sonal Dekhane

Marilyn Suiter

Tarketta Thorne







# 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











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

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# Program Solicitation (22-634)

## **Submission Deadline**

- October 10, 2023, 5pm local time of the submitting institution

## **Total maximum project budget**

- \$5M

## **Project duration**

- Up to 5 years

## **Total program budget funding from across EDU 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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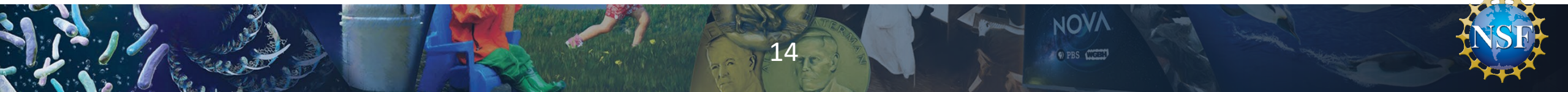






# Leadership and Authentic Partnerships

- 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;









# 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 Qualitative Approaches

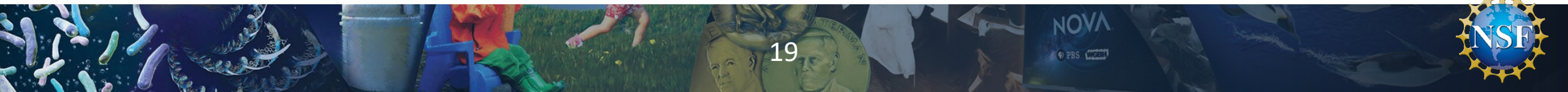
- How research questions are posed
- Justify the methods used
- Describe the development of interview protocols, etc.
- How will the data be collected and by who
- Description of the data analysis, e.g., development codebook, how will the data be coded, themes identified.





# Considerations for Quantitative Approaches

- How research questions are posed
- Data collection – How and why?
- Use of existing data sets, e.g., license needed?
- Generating a new data set
- Contextualization and inferences on quantitative data





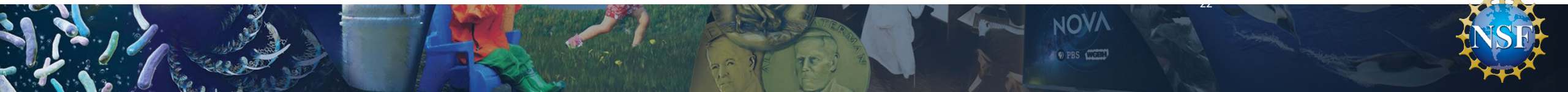






## *Nuts and Bolts:*

- Optional one-page concept paper
  - Submission details
  - Proposal Preparation
  - Proposal Timeline
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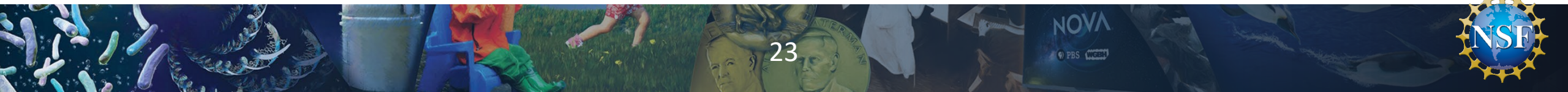






# Nuts and Bolts: Optional One Page Concept Paper

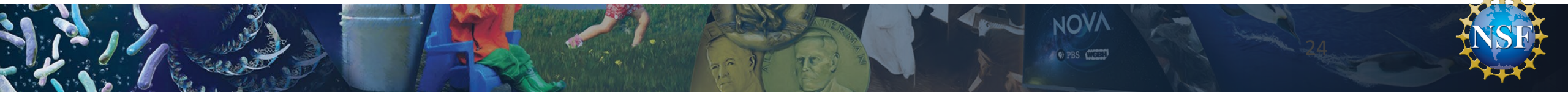
- If you would like feedback on a concept, email a one-page concept paper to [EDURacialEquity@NSF.gov](mailto:EDURacialEquity@NSF.gov)
- Be clear with respect to how your concept aligns with the Racial Equity in STEM Education Solicitation (NSF 22-634)
- To receive feedback before a deadline date, concept papers must be received at least **six weeks** prior to the submission deadline (**August 29th, 2023**; October 10, 2023 competition)





## Nuts and Bolts: Full Proposal Submission Deadline

- Next submission date – **October 10th, 2023**
- Proposals can only be submitted using:  
Research.gov or Grants.gov





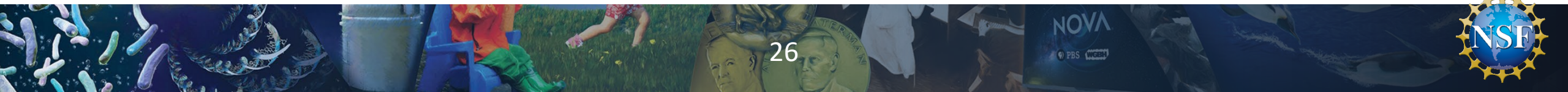






# NSF Merit Review Criteria: 5 Questions

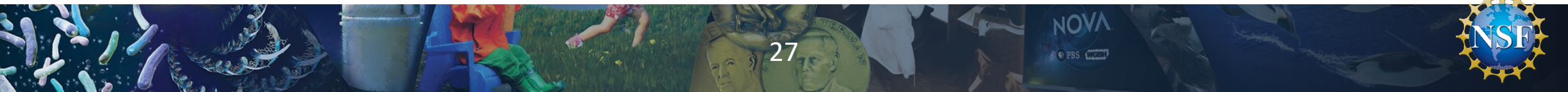
1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields (**Intellectual Merit**); and
  - b. Benefit society or advance desired societal outcomes (**Broader Impacts**)?
2. To what extent do the proposed activities 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?



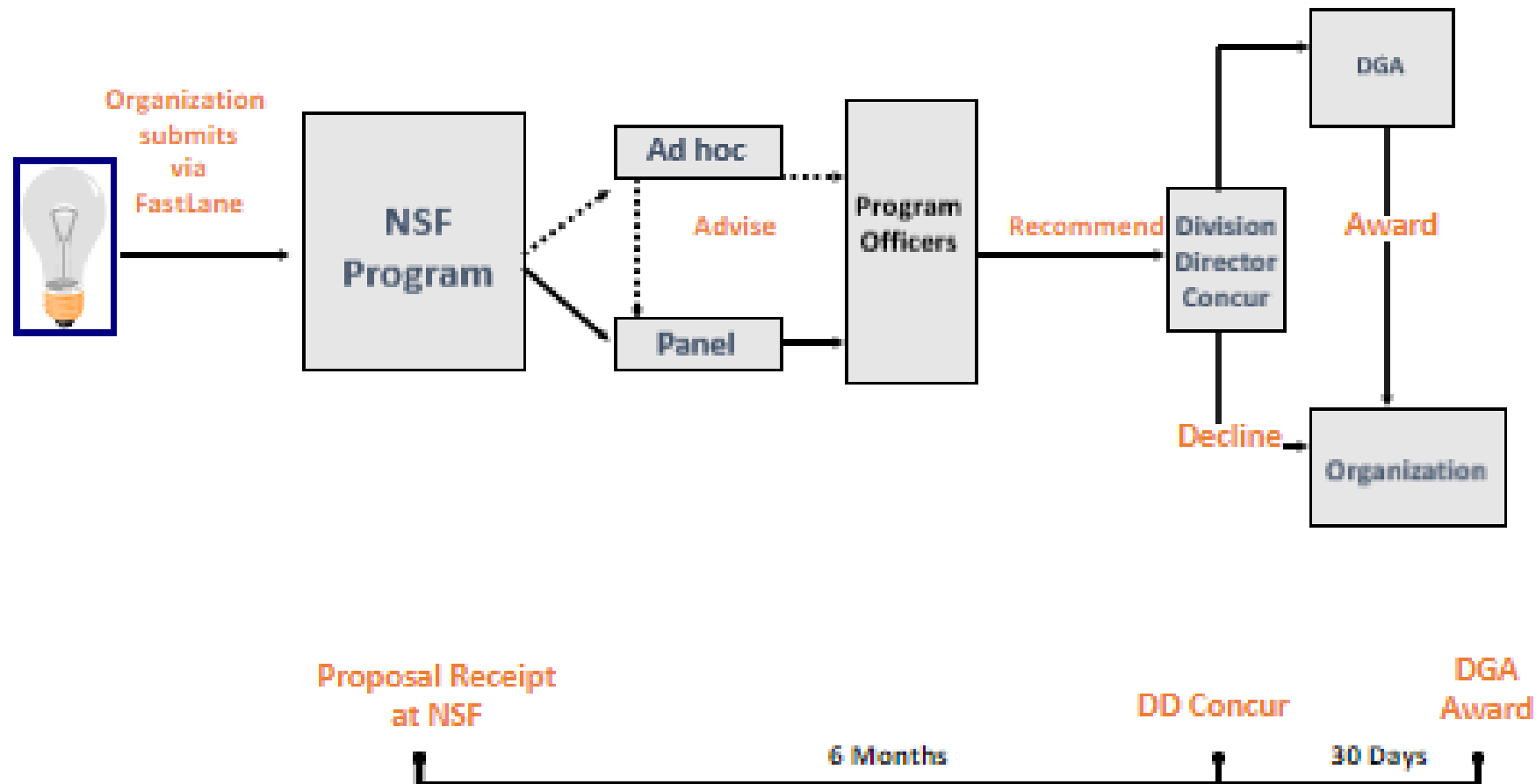


# Proposal Preparation: Proposal Submission Content

- 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: **August 28<sup>th</sup>, 2023***
- Current and Pending Support -- *Use the nsf.gov forms...see the website*
- Facilities, Equipment and Other Resources
- Special Information and Supplementary Documentation -- *Required!*
  - Data Management Plan -- *See nsf.gov, search on "EDU 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









# Turn off recording & Start answering the Q&A Live

