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# NSF Merit Review for a Changing Landscape

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## NSF Mission

“to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense; and for other purposes.”

## Commission Charge

“to assess the efficacy of the current Merit Review policy and associated criteria and processes at supporting NSF’s mission to create new knowledge, fully empower diverse talent to participate in STEM, and benefit society by translating knowledge into solutions”



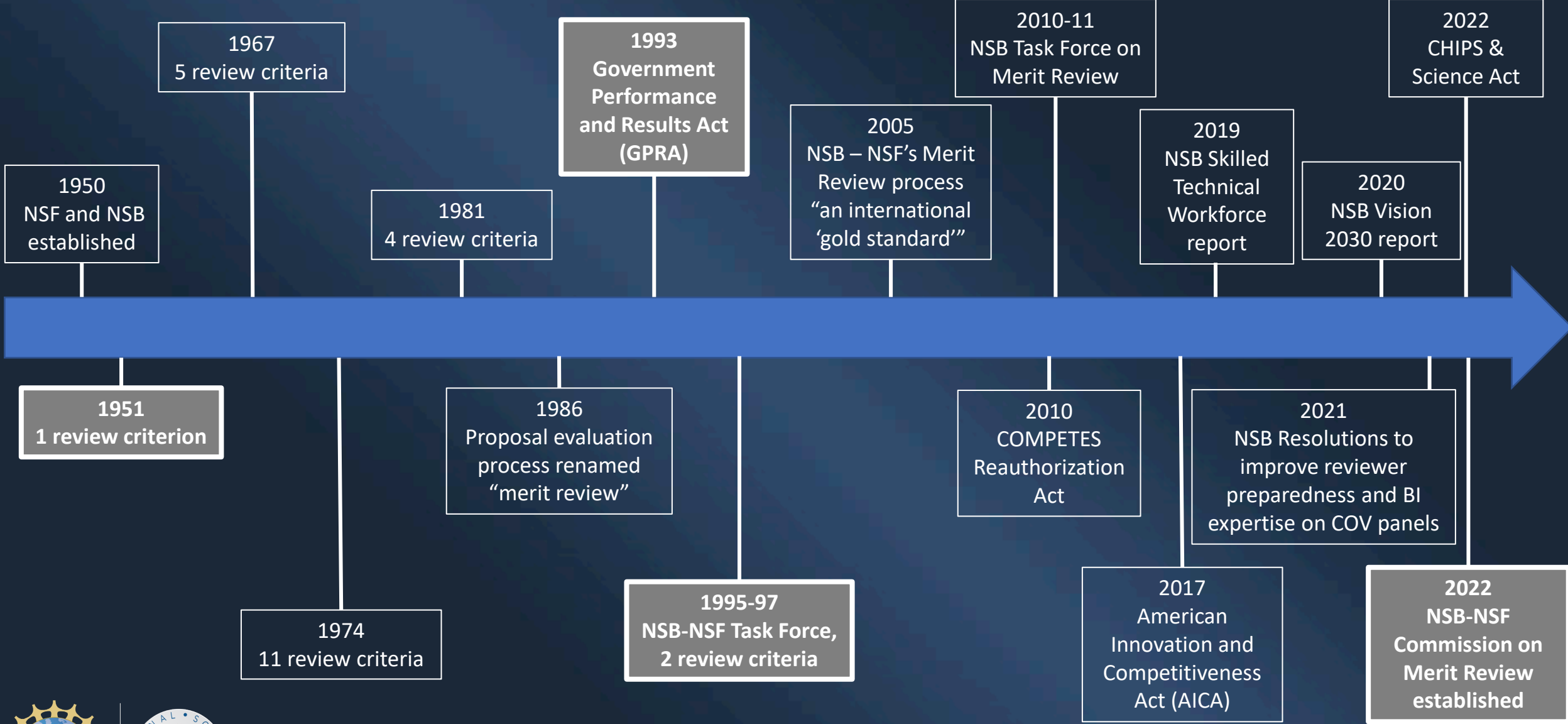
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# Research in Service of the American People

- Everything NSF funds — from basic research to technology translation to talent development — **should benefit the American people.**
- We must **strengthen NSF's agility** and its ability to leverage the perspectives and expertise of people in all sectors, across industry, academia, government, and states.
- **NSF must be accountable**, constructing award portfolios that show American taxpayers what they are getting for their investment.
- An updated Merit Review policy is a key part of how the priorities, operations, and structure of a **next generation NSF** will be relevant to today's science and technology (S&T) challenges while also supporting the most meritorious research.

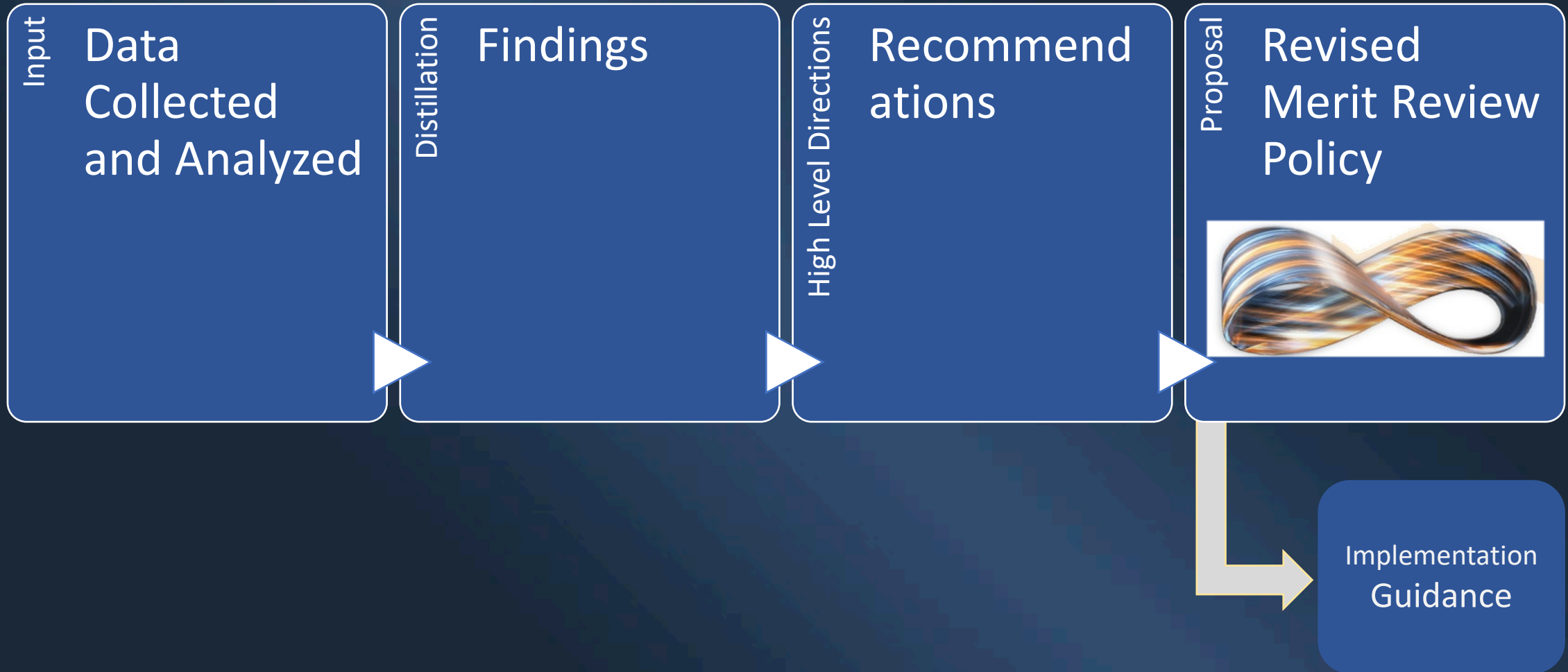


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# Our Work



# Key Questions Emerged

Does the Merit Review process

- Provide sufficient transparency to meet the expectations of NSF stakeholders and to facilitate strategic, evidence-based decisions within the agency?
- Help NSF strategically build a portfolio that covers a wide range of intellectual and societal benefits, including those areas mandated by statute?
- Reflect the full breadth of science & engineering (S&E) expertise and relevant expert perspectives from across communities and sectors?



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# Findings - Strengths

- A competitive process that relies on expert review is the best method for awarding funds.
- The two NSB-approved criteria, Intellectual Merit and Broader Impacts, are appropriate for identifying proposals that advance NSF's mission.
- Program Directors are critical and should be empowered in decision making and portfolio construction.



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# Findings - Opportunities

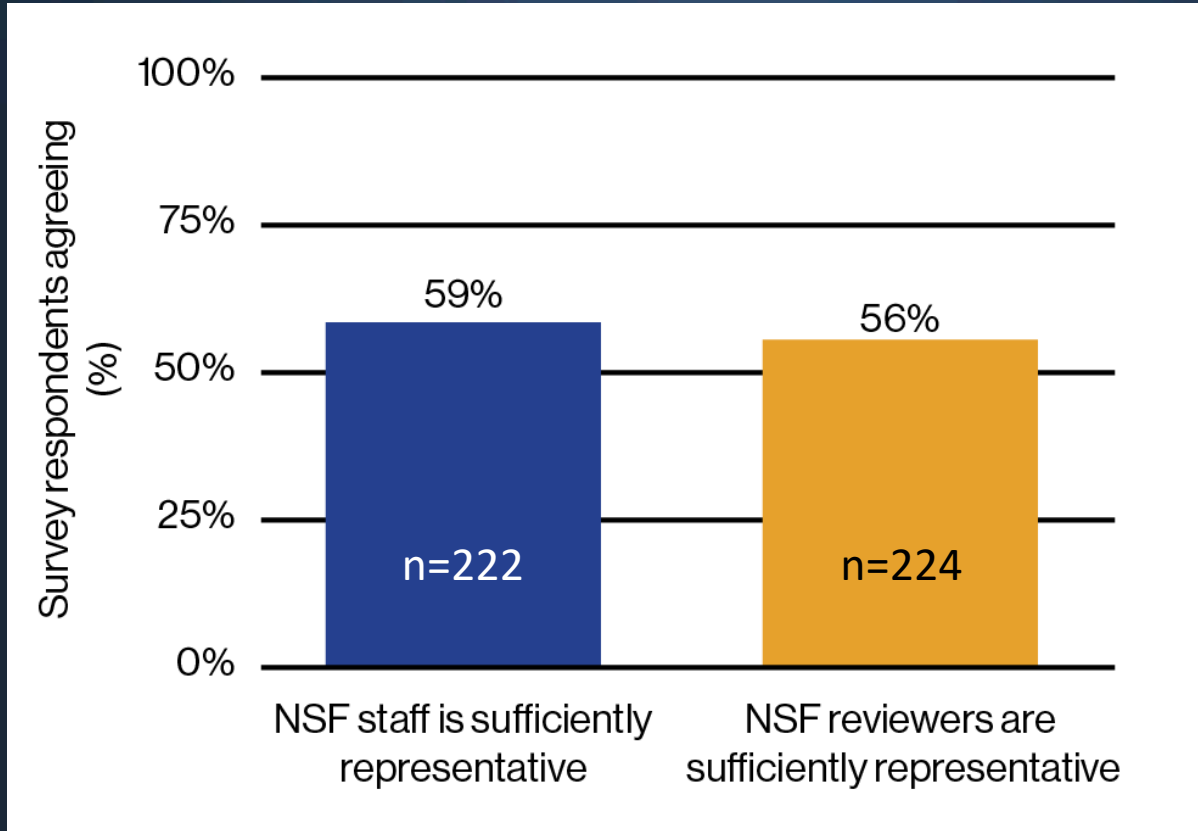
- Improve proposal evaluation to better inform agency strategy.
- Document construction and management of the award portfolio above the program level.
- Establish consistent metrics to evaluate, track, and report outcomes.
- Revise and clarify Merit Review policy and guidance, particularly to enhance understanding of Broader Impacts.
- Improve policies and processes to boost participation including across regions, states, sectors, and institution types.



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# Expanding Participation

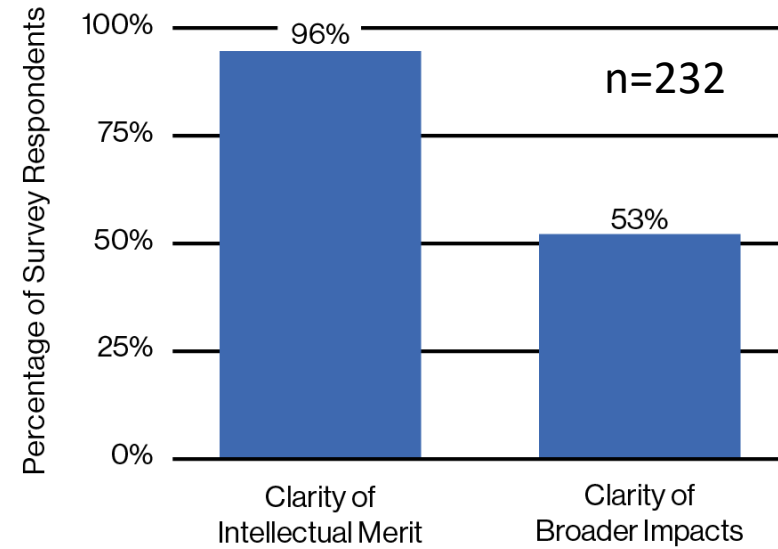
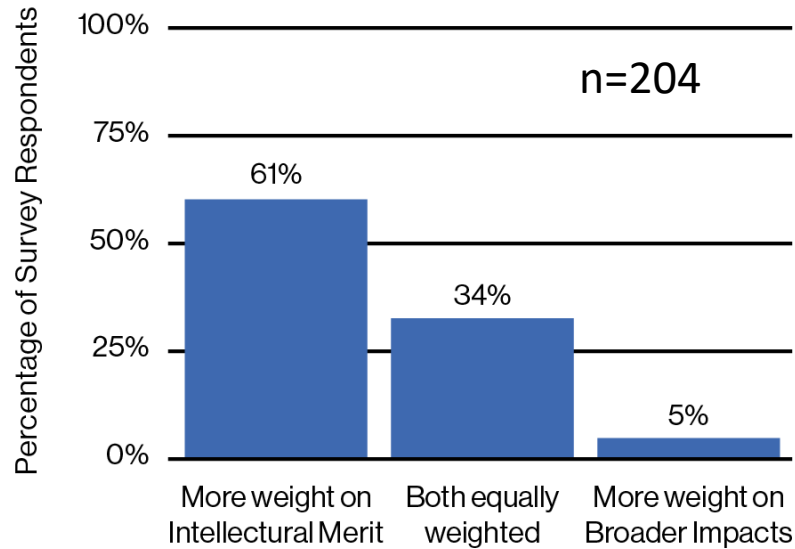


*Results from survey of NSF staff*

- Just over half of NSF staff agreed that staff (blue) and reviewers (gold) represent a sufficiently representative range of individual and institutional characteristics to achieve MR goals.
- To stay at the forefront of discovery *and* deliver benefits to the nation, we must seek out a wider range of perspectives and expertise to provide input on what science questions to ask, what problems are urgent to solve, and what constitutes “excellent science” and “societal benefit.”
- It is essential to draw proposers, reviewers, and staff from across geographies, sectors, institution types, and demographics, as permitted by law.



# IM and BI – Challenges Persist



**Weighing Criteria:** 61% of NSF staff survey respondents reported they place more weight on Intellectual Merit than on Broader Impacts. Only approximately one-third of NSF staff report that they weight the two criteria equally.

**Assessing Criteria:** NSF staff reported that nearly all (96%) feel it is clear how to assess a proposal's merit for the Intellectual Merit criterion. In contrast, little more than half think it is clear how to assess the Broader Impacts criterion.



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# Policy Recommendations

1. Pursue **renaming** the “Broader Impacts” criterion to “**Societal Benefits.**”
2. **Maintain and refine** the definitions of the two current review criteria and **clarify** the use of additional review considerations.
3. **Emphasize** the advancement of science and engineering **and** delivery of societal benefits.



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# Policy Recommendations

4. **Boost participation** and invite expert reviews from a wider range of disciplines, employment sectors, institutions, and geographic regions.
5. **Clarify alignment** of award portfolios with NSF strategy and outcomes.
6. Strengthen agency **transparency** and **accountability** and promote **continuous improvement**.



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# Proposed Revisions to Merit Review Policy

## Principles

- Full, documented, and transparent review of both criteria
- Full spectrum of both criteria in award portfolios
- Appropriate metrics for project- and portfolio-level evaluation
- Value of a wide range of viewpoints in criteria evaluation



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# Proposed Revisions to Merit Review Policy

## Criteria

- Articulates fuller scope of Intellectual Merit
- Emphasizes scope of statutory Broader Impacts goals
- Clarifies role of solicitation-specific guidance

## Considerations (formerly Elements)

- Clarifies consideration of novel research and approaches
- Articulates specific considerations for program staff



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# Guidance on Application of Policy Recommendations



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# Looking Ahead

This is an opportunity for reflection and recommitment to supporting S&E research and education that advances the progress of science and U.S. prosperity and security.

While NSF's mission remains the same, an ever-evolving S&E ecosystem demands a **next generation NSF** with a nimble and transparent funding process that benefits from the full participation of and delivers benefits back to all Americans.

We are eager to hear your thoughts – the floor is open for discussion!

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