

U.S. National Science Foundation Evaluation Policy

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Galactic center with a very weak aurora in the foreground. Credit: Daniel Luong-Van.

About This Policy

This document outlines the key principles that guide evaluation activities conducted or supported by NSF. It is informed by legislation regarding federal evaluation and performance management activities, including the “Foundations for Evidence-Based Policymaking Act of 2018” (“Evidence Act”) and the “Data Quality Act of 2001.”

About The U.S. National Science Foundation (NSF)

NSF was created “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense” (1950, as amended).

NSF seeks to achieve these goals through an integrated strategy that advances the frontiers of knowledge; cultivates a world-class, globally-competitive science and engineering workforce; expands the scientific literacy of all citizens; builds the nation’s research capabilities through investments in advanced instrumentation and facilities; and supports excellence in science and engineering research and education.

NSF is committed to evaluating the efficacy and efficiency of its strategy, leveraging evaluation to help the agency achieve its mission.



*National Science Foundation Headquarters.
Credit: Maria B. Barnes/NSF.*

Scope of Evaluation Activities

An evaluation is “an assessment using systematic data collection and analysis” (Evidence Act). Assessments may have different targets—an intervention, program, policy—and serve different purposes, such as building evidence to support program improvement and accountability.

The principles described in this document therefore apply to a wide range of activities conducted as part of efforts to generate evidence useful for decision making. These include policy studies, performance measurement, and descriptive and exploratory analysis.

Throughout this document, the term “evaluations” refers to all of these evidence-building efforts.





Researcher Ben White places seismometer atop Corona Arch.
Credit: Alison Starr, University of Utah

Evaluation Principles

Five principles are presented in this document:

1. Relevance
2. High Quality and Rigor
3. Independence
4. Transparency
5. Ethics

These principles align with and affirm NSF's commitment to federal evaluation standards and leading research practices.

Selected enabling practices are included to showcase examples of NSF practices that foster implementation of these principles.

Evaluators from inside and outside the foundation who are participating in NSF's evidence-building activities are expected to adopt these principles for findings from their work to be useful. They are also expected to balance decisions judiciously in addressing tensions or conflicts among principles, if any arise.

1. Relevance

Evaluations supported by NSF must address questions of importance and serve the information needs of varied interested parties, such as Congress, NSF leadership and program staff, the research community, and other audiences. Evaluators should seek to include the multiple perspectives of program participants and interested parties. To be useful, relevant data collection efforts should be rigorous, representative, and repeatable. Methods used should produce credible findings. Evaluations should present findings that are clear, actionable, and timely to inform agency activities and actions such as program improvement, accountability, management, and policy development.

Enabling practice:

To ensure relevance and utility of evidence-building activities, evaluators collaborate with interested parties in different phases of the work, as appropriate, including in the interpretation of data and dissemination of results. NSF evaluators and collaborators shall seek to understand the effect of the program or policy being evaluated.

2. High Quality and Rigor

Evaluations must produce credible evidence—findings that NSF and interested parties can confidently rely upon. To produce such evidence while balancing constraints like time and resources, evaluations must rely on the most appropriate rigorous designs and methods consistent with the accepted practices to answer key questions; provide clear explanations of limitations; ensure appropriate execution of the study design with quality controls and regular risk monitoring; and promote proper interpretation of findings.

Enabling practice:

To develop high-quality evaluations, when appropriate, NSF-supported studies shall begin by developing a logic model (based on a theory of change), which provides a framework to understand and communicate how a program or intervention is hypothesized to yield expected results.

3. Independence

NSF is committed to supporting evaluations that are objective and impartial. This is essential to produce credible findings that interested parties may rely upon in making decisions. Evaluators shall strive for objectivity and impartiality in planning, conducting, interpreting, and disseminating findings from the studies in which they participate. The implementation of evaluation activities, including how evaluators are selected and operate, shall be insulated from undue influences and conflicts of interest that may affect their objectivity, impartiality, and professional judgement.

Enabling practice:

NSF evaluators and collaborators shall follow NSF procedures to identify and prevent conflicts of interest, and engage in peer review and quality control processes at appropriate stages of the life cycle of an evaluation.



*Monarch butterflies basking in the sun.
Credit: Florida Museum photo by Court Whelan.*

4. Transparency

NSF promotes transparency in the planning, implementation, and reporting phases of evaluation activities to promote dialogue that enhances quality, enables accountability, and prevents tailoring that influences findings. Transparency is crucial to support reproducibility and contribute to advancing knowledge. Whenever possible, completed evaluations will be released in a timely manner and with sufficient detail to support use of findings (including comparability to the existing literature) and replication.

Enabling practice:

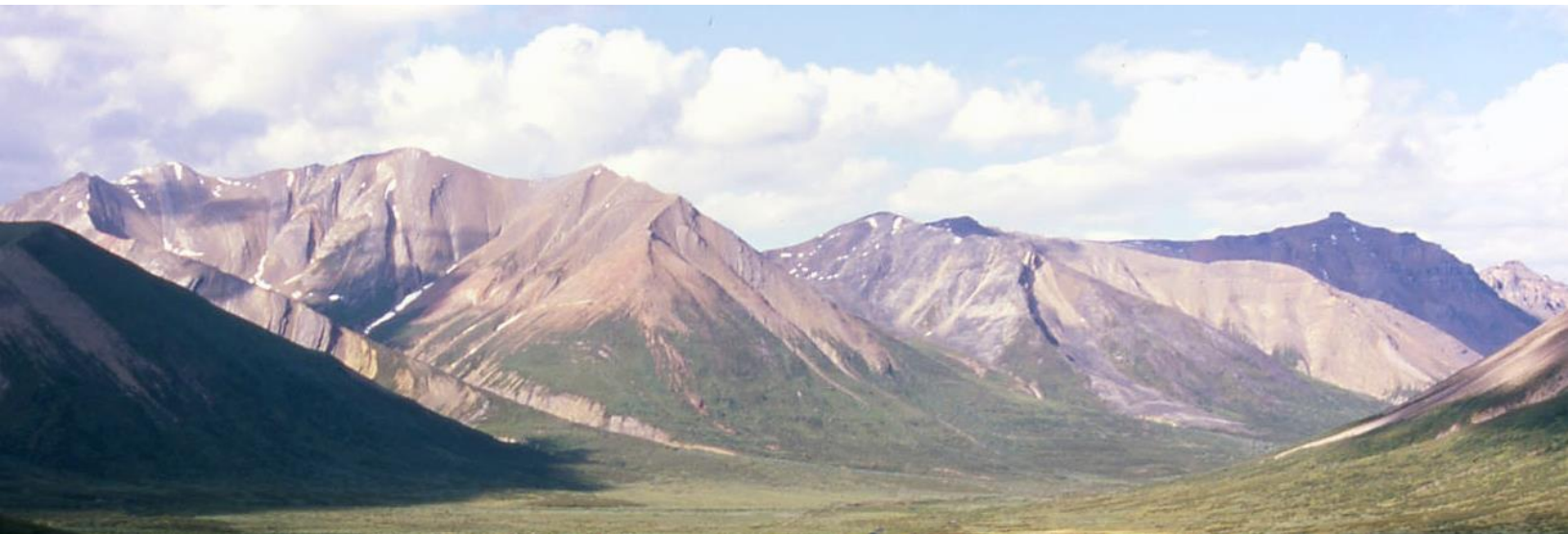
To the extent possible, decisions regarding the specification of the evaluation—such as objectives, design and methods, and dissemination of findings—will be documented ahead of time, taking into consideration and abiding by any legal, ethical, national security, or other constraints to disclosing information.

5. Ethics

Evaluations supported by NSF will be conducted with the highest ethical standards to protect the public and maintain public trust in the agency's evidence-building efforts. Evaluations shall be planned and implemented to safeguard the dignity, rights, safety, and privacy of participants and other affected entities, abiding by regulations governing research involving human subjects. Evaluations will be fair, objective, and consider contextual factors that could influence the findings, their interpretation, or their

Enabling practice:

Evaluators engaged in studies supported by NSF shall submit their work for quality review before use or release to ensure ethical and other principles are upheld.



Research field site—MacKenzie Mountains, Canada. Credit: Bruce S. Lieberman, University of Kansas