



S-STEM REC

Common Questions about Generation of Knowledge, Research, and Evaluation Responses provided by the [S-STEM REC](#)

Q: Could you explain the program expectations in terms of Knowledge Generation and Dissemination for the different tracks?

A: One of the core premises of a large federal grant such as S-STEM is that it should be able to contribute to the greater field of STEM education and labor workforce development in a STEM area through conducting effectiveness/impact studies, as outlined in the [Common Guidelines for Education Research and Development](#) (IES, US DoE, and NSF, 2013). We recommend that both the researchers and evaluators review the Common Guidelines before writing the Research (Track 3) and Evaluation plans (Tracks 1-3) that contribute to the Generation of Knowledge for all Tracks. They should pay careful consideration to the type of study they would be doing: Foundational, Early Stage or Exploratory Research, Design and Development, Early or Efficacy Research, Effectiveness Study, and Scale Up Study. In this context, the S-STEM projects should strive to increase the understanding of the contributions that the proposed student supports (both curricular and co-curricular) can make to the program goals of STEM engagement, persistence, retention, and graduation when coupled with scholarships from the S-STEM grant.

All proposals should include a robust dissemination plan to share the project's implementation processes and mechanisms, Scholar outcomes, and/or other findings with communities that are similarly engaged in efforts to improve outcomes for low-income STEM students. Some of these include manuscripts, publications, conference presentations, blogs, posters, etc.

Q: Are evaluation and research required in every S-STEM grant? What is the difference between evaluation and research?

Education or Social Science Research plans are not required for Planning Grants, Track 1, or Track 2 S-STEM proposals. Track 3 proposals, however, must incorporate a research plan. All proposals, except Planning Grants, must include an evaluation plan. Evaluation plans focus on the execution of the project (formative) and can glean lessons from the successes and challenges that are encountered. A logic model or theory of change is required; both are good ways to convey the evaluation plan. Research plans should be grounded in an Education or Social Science research theoretical framework that will allow the results to be relevant beyond the immediate context of the project. Sections stating clear research questions and methodological approaches to answer those questions are required in the research plan for Track 3 proposals.



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Q: What is meant by "external" evaluator? How much of the budget should be allocated for evaluation?

S-STEM requires an evaluation report to be uploaded together with the regular award's annual report every year. This evaluation report should be formative in nature in the first few years of implementation and summative in the final year. The external evaluator needs to assess the extent to which the project's goals are being met and provide formative feedback to the project leadership team. The objective of the formative feedback is to course-correct any problems. Hence, the external evaluator is expected to be an independent, objective, and unbiased assessor of the project. This independence can only be accomplished by someone who is not attached to the project as PI or senior personnel or reports to the PI team in any direct way. Thus, a researcher at your institution who is outside of the project leadership team's department (such as in Psychology, Sociology, or Education) may be an external evaluator.

Regarding reasonable budget allocation, it varies. The range of the evaluation budget varies with the scope: from small single-institution projects to large multi-institution implementations with travel involved. Proposers are tasked to write research and evaluation plans that make sense for their projects and align the budget with the scope of those plans. Depending on the scope of the project, the time commitment per year will vary. NSF wants to see a clear justification for the time commitment and subsequent budget allocation for the evaluation component. External evaluators need to establish their hourly rate and how many hours they are dedicating to the project. Depending on whether the evaluator is a member of the institution's staff or an independent consultant, budget requirements can vary. A rule of thumb observed in many successful projects is that the evaluator charges around 2-5% of the total budget.

Q: Can we hire a social science researcher as a consultant or collaborator, not Co-PI?

A: For Track 1 or Track 2, yes. For Track 3, a social science/educational researcher must be listed as a Co-PI.

Q: Regarding the role of the external evaluator, is it limited to only assessing the program and evaluating the results? Can the evaluator be involved in the design of evaluation instruments?

A: Yes, the evaluator should be involved in the study design, and developing the evaluation questions, and tools.

Q: How should the external evaluator be included? Is it appropriate for that person to be part of an advisory board?

A: The evaluator is a consultant who is either totally external to the institution or to the project team involved in the grant work. Typically, they are not a part of the advisory team.

Q: For a Track 2 project without the required Generation of Knowledge outside of evaluation, we are planning for a member of our Institutional Research team to serve as the independent evaluator. Is this acceptable? A reviewer on a past submission expressed concern about this method but we thought it is allowed per the guidelines.

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A: In general, you want to be able to make the case that the named evaluator is qualified to evaluate a large federal grant of this type. This would generally go beyond simply using Institutional Research data/input, but you may be planning to examine additional data streams/sources that would help you assess your grant's components (e.g., interventions, scholar experiences, leadership team effectiveness, etc.) and progress towards overall goals.

Q: While research is not required for Track 2, is it okay to include it in our proposal if we want to do it?

A: Yes.

Q: The solicitation says that for Track 3 proposals, research should align with knowledge generated from efficacy and effectiveness studies as described in the Common Guidelines. Conducting true efficacy or effectiveness studies involving randomized trials is costly, however. Given the relatively small amount of funding that can go to research, is it ok to propose research that does not involve a large, randomized trial?

A: Small sample sizes are not uncommon in S-STEM grants. However, based on your project's data availability, you may want to consider conducting correlational or longitudinal studies, drawing information from alumni surveys, or conducting a quasi-experimental design study using institutional or historical data, if feasible.

Q: Are there publications you can provide that conclude that students who conduct research garner a sense of belonging in their major/discipline earlier than others?

A: We suggest that you review the literature on college student research experiences and sense of belonging. Some resources you may want to look further into include [white papers](#) by the Council on Undergraduate Research, consensus studies by the National Academies of Sciences, Engineering, and Medicine such as [Undergraduate Research Experiences for STEM Students](#) (2017), and [The Science of Effective Mentorship in STEMM](#) (2019), and studies on sense of belonging in STEM like [Dortch, D. & Patel C.](#) (2017) and [Rodriguez, S. L., & Blaney, J. M.](#) (2021).

Q: Are the services provided by MN Associates through the S-STEM REC free of charge?

A: MN Associates, Inc. (MNA) has been contracted by AAAS to be the evaluation technical assistance provider within the S-STEM Resource and Evaluation Center (REC). As part of the S-STEM REC, MNA will provide free resources and feedback to support prospective and current S-STEM projects in the areas of research and evaluation. Specifically, this includes insights into research plans (for Track 3), evaluation plans (for all Tracks), and study designs to prospective applicants, as well as ongoing technical assistance to current S-STEM awardees free of charge. Seeking assistance through the S-STEM REC will not generate any additional reviewer points for submitted proposals.

Q: Do proposers still need to find their own external evaluator and set-aside funds for the evaluator, or can we propose to have the S-STEM REC as the evaluator?



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A: The S-STEM REC will provide insights into evaluation planning and execution, but individual projects will still need their own independent and qualified evaluator. The AAAS S-STEM REC does not create evaluation plans or help run evaluations for projects.

Q: Where can I find an independent evaluator to work with me on my S-STEM project?

A: You can find an external evaluator via the [American Evaluation Association website](#).



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