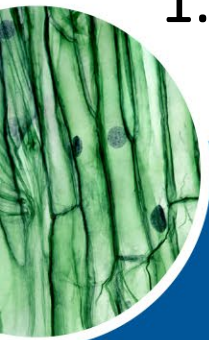




Scholarships in STEM (S-STEM)
Resource & Evaluation Center (REC)

S-STEM Impact: Insights from Scholars and Projects

August 6, 2025
1:00-2:00 p.m. ET



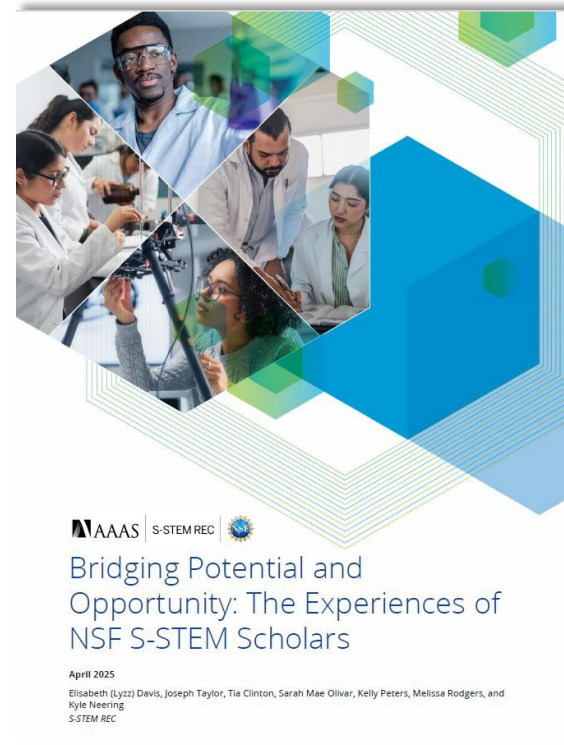
NSF AWARD #2224093: AAAS-NSF S-STEM
Resource & Evaluation Center

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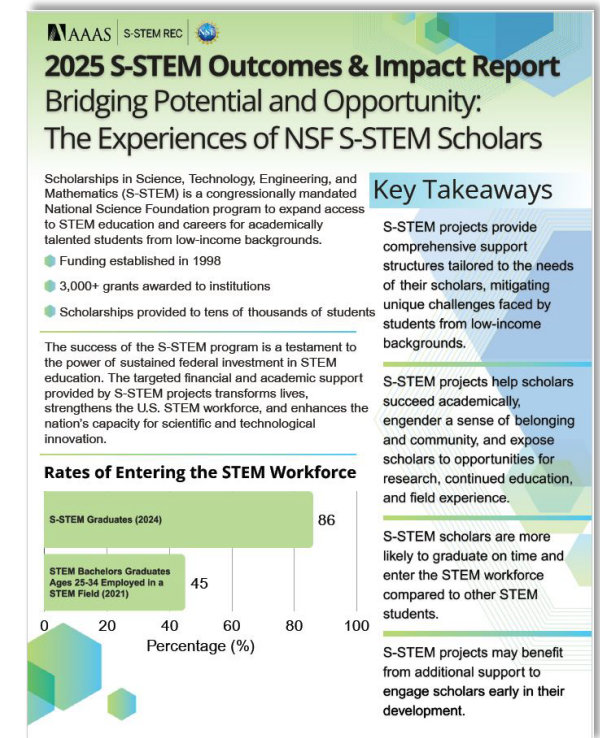
Today's Session Objectives

- Disseminate Key Findings
- Highlight Effective Practices
- Support Evidence-Based Decision Making

2025 S-STEM Outcomes & Impact Report



[Report Link](#)



[Brief Link](#)

Housekeeping



Please keep your microphone on mute when not speaking. You are welcome to use the “raise your hand” button or type into the chat if you have a comment.



A great deal of how we communicate involves body language and nonverbal cues are helpful to let us know how you are responding to the discussion. If possible, please turn on your camera.



You are welcome to introduce yourself in the chat.



Live ASL Interpretation and closed captioning is available.



Today's slides and recording will be posted on the event page of the S-STEM REC website.



Contact Jamila Blake in the chat or at jblake@aaas.org for technology questions or issues.



Please take our short live survey to provide feedback on this virtual event!

Disclaimer

This material is based upon work supported by the National Science Foundation under Grant No. DUE-2224093.

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AAAS S-STEM Resource and Evaluation Center (REC)

The S-STEM REC seeks to cultivate a network of S-STEM stakeholders and promote the exchange of ideas, resources, opportunities, and knowledge related to the effective strategies and practices to increase the number of talented low-income students obtaining degrees in STEM and entering the STEM workforce.

AAAS S-STEM REC works to:



Increase the effectiveness of the S-STEM Portfolio



Build the capacity of S-STEM Network Programs



Build the capacity of S-STEM Scholars



This material is based upon work supported by the National Science Foundation (NSF) under Grant No. DUE-2224093. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the NSF.

S-STEM REC Team



NSF SCHOLARSHIPS IN STEM NETWORK SOLICITATION



S-STEM REC

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MNA



Quality Education for Minorities (QEM) Network



CERSE



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Meet the Presenters



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What We Will Cover Today

- Highlight effective strategies used by S-STEM projects to support scholar success
- Identify key successes and persistent challenges across S-STEM projects
- Share how scholar feedback is informing future improvements to the S-STEM program



Agenda

1. Study Background & Motivation
2. Study Design
3. Key Findings
4. Implications & Recommendations
5. Discussion
6. Next Steps & Wrap Up



Study Background & Motivation

About This Study

- Five-year evaluation (2023–2027) of the S-STEM program
- Includes active S-STEM awards that began on or before Dec. 31, 2022, and end on or after May 1, 2024
- Uses a robust mixed-methods design, incorporating surveys, interviews, extant data, and meta-analysis
- Evaluates program outcomes at the scholar, PI, and IHE levels
 - This presentation shares interim findings from Year 3 (2025), focused on scholar supports, experiences, and challenges

Study Design

Main Research Questions

1. What evidence-based practices (e.g. mentoring, research opportunities) are implemented by institutional participants of S-STEM projects, and what are the components of these practices?
2. To what extent did scholar, PI, and institutional outcomes improve among S-STEM participants?
3. How do program outcomes vary by the evidence-based practices implemented and by student, PI, and institutional characteristics?
4. What are the facilitators of and barriers to S-STEM student success? What strategies help participants mitigate barriers to successful participation?

Exploratory Research Questions

1. To what extent do S-STEM scholars participate in evidence-based activities?
2. What are scholar and PI perceptions of the influence of the S-STEM program on scholar outcomes?

Data Sources, Sample and Use

| Data Source | Sample (Timing) | Use |
|---|--|--|
| Scholar Interviews | <ul style="list-style-type: none"> • 51 interviews (Fall 2023) • 24 follow-up interviews (Spring 2024) | <ul style="list-style-type: none"> • Explore scholars' motivation for applying, support mechanisms, academic and career outcomes, and feedback (Main RQs 1, 2, 4) |
| Principal Investigator (PI) Survey | <ul style="list-style-type: none"> • 452 PIs from active awards (Spring 2024) • 238 (53% RR) PIs responded | <ul style="list-style-type: none"> • Assess PI perceived impacts, experiences in, and resources of S-STEM projects (Main RQs 1, 2, 3; Exp. RQs 1, 2) |
| Scholar Survey | <ul style="list-style-type: none"> • 378 scholars from active awards responded (Spring 2024) | <ul style="list-style-type: none"> • Assess scholar perceived impacts, experiences in, and resources of S-STEM projects (Main RQs 1, 2, 3; Exp. RQs 1, 2) |
| Project and Scholar Data | <ul style="list-style-type: none"> • 152 active PIs provided data on their projects (Summer 2024) • 155 active PIs provided data on 2,930 scholars (Summer 2024) | <ul style="list-style-type: none"> • Collect project-level evidence-based practices and project research (Main RQs 1, 2, 3) • Collect scholar-level demographic, academic, and retention data (Main RQs 1, 2, 3) |
| Meta-analysis of S-STEM Projects' Research Findings | <ul style="list-style-type: none"> • 30 eligible S-STEM studies with quantitative impact data from publications prior to July 1, 2023 | <ul style="list-style-type: none"> • Collect project-level intervention details, evidence-based practices, and project impacts (Main RQs 2, 3) |

Study Measures

| Measure | Definition | Data Source(s) |
|---------------------------------------|---|--|
| Evidence-Based Practices (EBP) | Includes faculty mentoring, extracurricular and cohort-building activities, professional development and research opportunities | PI Survey, Project Data, Meta-Analysis of Project Research |
| Scholar Engagement | Frequency of scholar participation in project activities | Scholar Interviews, Scholar Survey, Scholar Data |
| Perceived Impacts | Perceived extent to which participation in S-STEM improved scholar's outcomes such as academic performance, persistence, graduation and job placement in field-related industry | Scholar Survey, PI Survey, Scholar Data |
| Institutional/PI Outcomes | Changes in teaching practices, collaboration, and supports | PI Survey, Project Data |
| Barriers/Facilitators | <p>Barriers identified by scholars that influence their experiences including time management, finances, logistics, and academics</p> <p>Supports identified by scholars that influence their experiences including adaptability and systems of support</p> | Scholar Interviews |

Analyses

- Analytic Approaches
 - **Descriptive Analyses:** Examine the use of EBP, level of engagement, and perceived outcomes
 - **Cross-Tabulations:** Explore patterns based on scholar characteristics or institutional context
 - **Thematic Coding:** Analyze open-ended survey responses and interview data to identify key themes
 - **Meta-Analysis:** Synthesize findings from completed S-STEM project evaluations to identify broader trends and insights



Important Context for Interpreting Study Findings

- **Self-reported data:** Surveys capture perceptions from PIs and scholars, which may be biased (e.g., social desirability)
- **Potential overreporting:** PIs may overstate the effectiveness of projects they designed and implemented
- **Sample representativeness:** While PI responses reflect IHEs and awards similar to the full S-STEM portfolio, representativeness across other samples is uncertain
 - For example, there is no comprehensive list of S-STEM scholars, making it difficult to assess how representative responding scholars are of the broader population

Key Findings

Overview of Key Findings



S-STEM Projects Used a Variety of Evidence-Based Strategies to Support Scholar Success



Scholars Reported Positive Impacts on Academic and Career Outcomes



Scholar Participation Was Highest in Mentoring and Cohort-Based Activities



Peer Support, Mentoring, and Self-Motivation Supported Scholar Persistence and Success; While Time, Finances, and Logistics Limited Participation and Progress



Projects Successfully Adapted to Scholars' Diverse Needs

S-STEM Projects Provided a Variety of Curricular Evidence-Based Strategies that Support Scholar Success

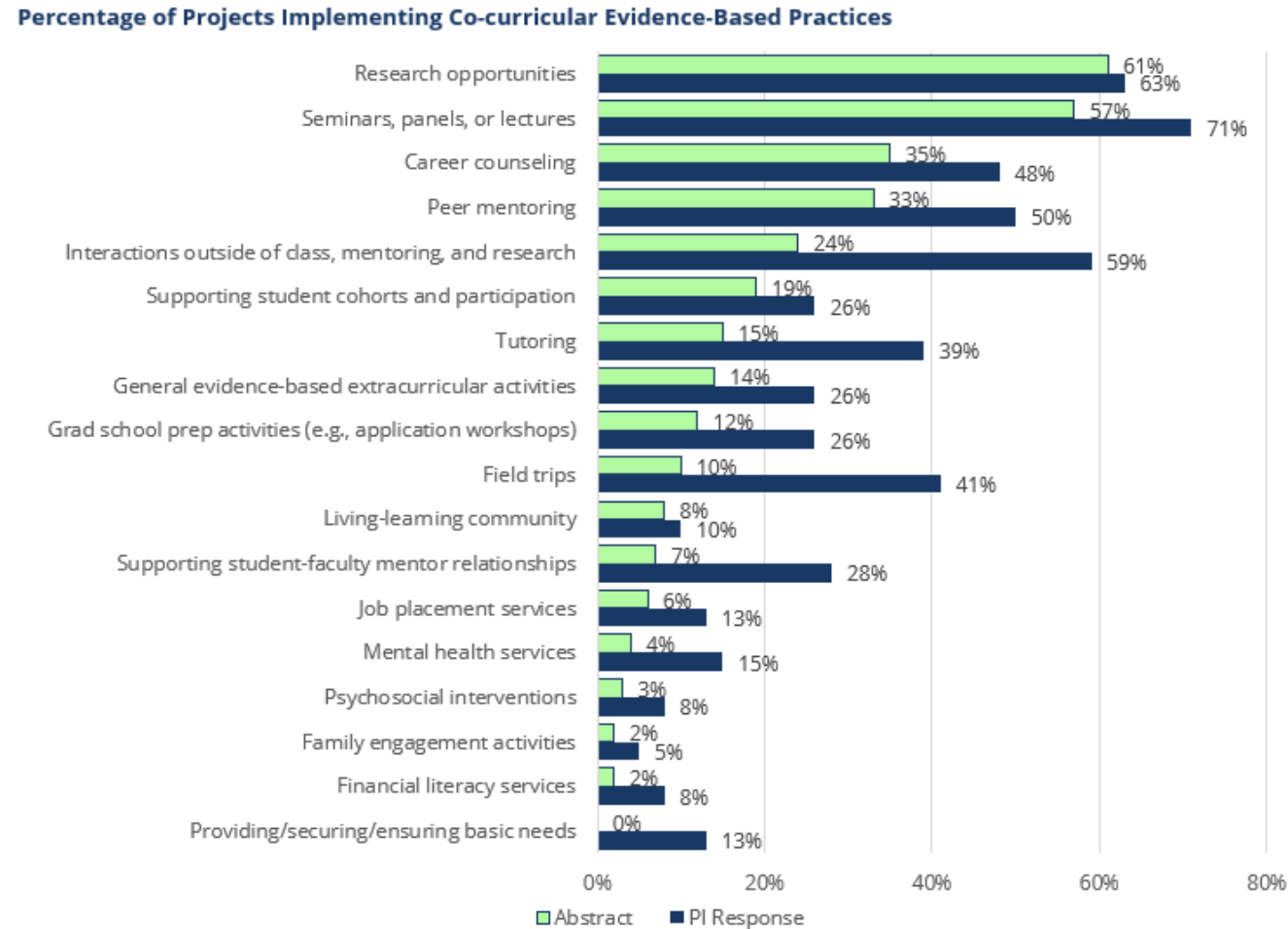
Percentage of Projects Implementing Curricular Evidence-Based Practices



Note: Percentages are based on 152 S-STEM PIs who responded to the study team's request for project information.

"[My mentor is] the person who I go to on a day-to-day basis, whenever I have questions, especially now that I'm starting graduate school applications. I've been meeting with her almost every day, asking her questions about what I should be doing, how I should be structuring my applications, and all of that. It's a really good mentor-mentee relationship that [S-STEM] has fostered."

S-STEM Projects Provided a Variety of Co-Curricular Evidence-Based Strategies that Support Scholar Success

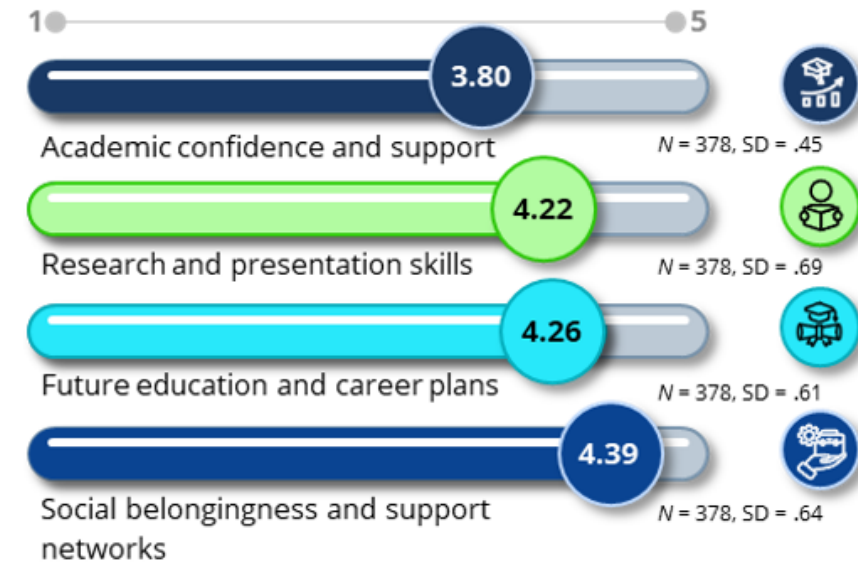


Note. Percentages are based on 152 S-STEM PIs who responded to the study team's request for project information.

Scholars Report Positive Academic and Career Impacts

- Scholars **agreed** that participation in the S-STEM project:
 - » Increased **social belongingness** and provided **support networks**
 - » Informed **future education and career plans**
 - » Strengthened their **research and presentation skills**
- Scholars were **slightly less positive** about:
 - » Academic confidence and support

Scholars' Composite Scores, by Outcome Theme

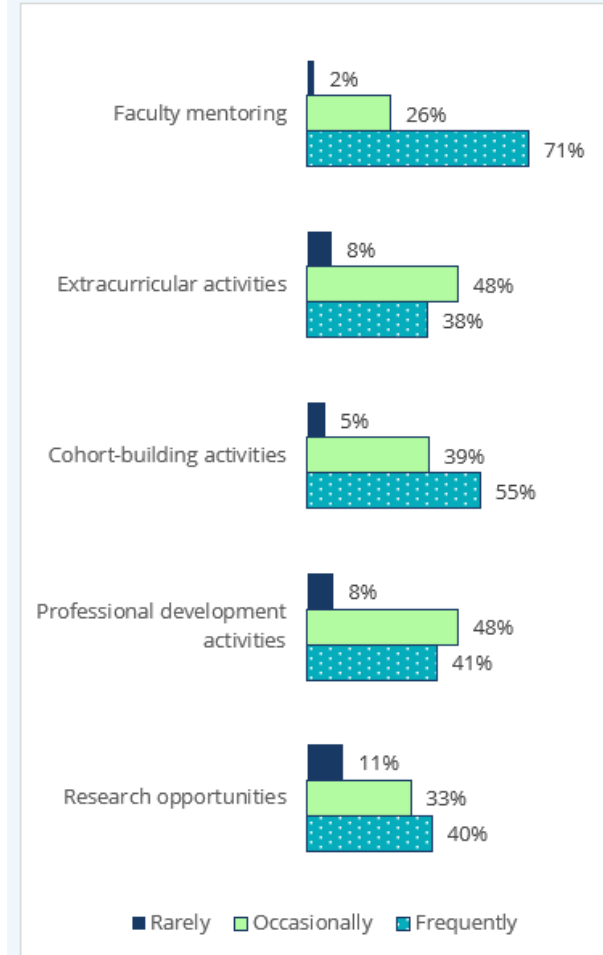


Note. SD is standard deviation.

Scholar Participation Was Highest in Mentoring and Cohort-Building Activities

- **Most Frequent:**
 - Faculty mentoring (71%)
 - Cohort-building activities (55%)
- **Less Frequent:**
 - Co-curriculars (38%)
 - Professional development (41%)
 - Research opportunities (40%)

Frequency of Participation in Scholar Activities, as Reported by PIs



Poll

Which S-STEM practice has had the greatest impact on student outcomes at your institution?

Peer Support, Motivation, and Mentorship Promote Scholar Engagement

- **Facilitators to Engagement**
 - Peer support and camaraderie
 - Intrinsic motivation (curiosity, growth, persistence)
 - Faculty mentorship and research advising



Time Management, Financial Constraints, and Logistical Challenges Limit Scholar Engagement

- **Barriers to Engagement**
 - Time management
 - Financial considerations
 - Logistical access
 - Award visibility and structure
 - Psychological and academic pressures



Poll

What is the biggest barrier your scholars face?

Projects Successfully Adapted to Scholars' Needs

- **Flexibility & Adaptability**
 - Hybrid schedules
 - Adjusted participation requirements
- **Comprehensive Support Systems**
 - Academic check-ins
 - Success coaching & mentorship
 - Logistical assistance
- **Feedback-Driven Improvement**
 - Scholar surveys & input
 - Responsive program adjustments

Poll

How do you currently use scholar feedback to improve your program?

Implications & Recommendations

Implications & Recommendations

- **Continue scholar-centered, flexible supports**
 - Scholars and PIs emphasized flexibility as essential to persistence and success
- **Sustain structured mentoring and peer networks**
 - Scholars valued mentoring and community
 - PIs highlighted its role in fostering belonging
- **Prioritize early engagement opportunities and strengthen outreach**
 - Scholars reported uneven access to opportunities
 - PIs recommended earlier and more structured supports
- **Formalize and use feedback loops**
 - Projects that actively gathered and acted on feedback were more effective in adapting to scholars' needs

Discussion

Discussion

- **Open Q&A**
- **Your Insights Matter**
 - How do these findings resonate with your IHE's experience?
 - In what ways might they inform or shape future S-STEM efforts?

Next Steps and Wrap-Up

Next Steps & Wrap-Up



- **Why Participation Matters**

- Your data informs the national STEM strategy
- Helps identify what works and for whom

- **Ongoing Efforts**

- Year 4 data collection(2026):
 - PI survey
 - Scholar survey
 - Scholar interviews
- Meta-analysis of published and unpublished evaluation reports

- **Get Involved**

-  Reminder email sent to PIs today requesting project and scholar information
-  Submit evaluation reports using this [LINK](#)

Provide Your Feedback on Today's Event!

Survey Link:

<https://tinyurl.com/au6b7f7y>





Stay Connected With The S-STEM REC!

Explore: <https://sstemrec.aaas.org/>

Join our Mailing List: <http://eepurl.com/grH5C9>

Connect on LinkedIn: <https://www.linkedin.com/company/csew>

Follow on Bluesky: <https://bsky.app/profile/aaascsew.bsky.social>

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