

Best Practices for Designing and Implementing NSF S-STEM Scholarship Projects

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ABSTRACT

This Birds-of-a-Feather session is for anyone interested in the NSF Scholarships in STEM (S-STEM) program, including current and former Principal Investigators (PIs) and those planning to apply. The S-STEM program funds scholarships and student support activities to support low-income, academically talented students in STEM. Any institution of higher education may apply for S-STEM funding, and a variety of projects are supported by the program. Designing and implementing a successful S-STEM project poses many challenges. The goal of this session is to catalyze a community of practice for S-STEM PIs. It will provide an opportunity to discuss lessons learned and best practices for writing S-STEM proposals, navigating the logistics of project implementation, and ensuring students have the support they need to be successful. Specific topics to be discussed include the following: (1) Understanding the solicitation requirements and common proposal mistakes; (2) Scholar recruitment and data-driven approaches for selection; (3) Cohort building including design of cohort-based activities for students from different majors or class years and strategies for integrating new students into an existing cohort; and (4) Remediation strategies including proactive interventions and peer support. The session leaders will introduce each topic; participants will then be invited to join a breakout group discussion of one of the topics. Lastly, participants will be invited to continue discussing S-STEM after SIGCSE by joining a Slack workspace dedicated to S-STEM best practices and lessons.

CCS CONCEPTS

• **Social and professional topics** → **Computer science education**.

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SIGCSE 21, Virtual Online,

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ACM ISBN 978-x-xxxx-xxxx-x/YY/MM...\$15.00

<https://doi.org/10.1145/nnnnnnn.nnnnnnn>

KEYWORDS

CS education, diversity, equity, and inclusion

ACM Reference Format:

Sami Rollins, Alark Joshi, Amruth N. Kumar, Stan Kurkovsky, and Tracy Camp. 2021. Best Practices for Designing and Implementing NSF S-STEM Scholarship Projects. In *Proceedings of SIGCSE '21 (SIGCSE 21)*. ACM, New York, NY, USA, 2 pages. <https://doi.org/10.1145/nnnnnnn.nnnnnnn>

1 SIGNIFICANCE/RELEVANCE OF THE TOPIC

S-STEM provides institutions with funding to recruit and retain promising students who are most in need of financial assistance. There is, however, a steep learning curve associated with starting a new S-STEM program. While there are many ongoing and previous projects, and a few have reported their experiences [1–3], we are not aware of any efforts to build a community of practice for S-STEM PIs. A community of practice should both (1) help lower the barrier to entry for prospective S-STEM PIs and (2) improve existing S-STEM projects. This, in turn, will improve our field by retaining a broader and more diverse set of students.

In this BoF, the session leaders will introduce the S-STEM program and provide short introductions to each of the following topics:

- **Understanding the solicitation requirements:** We will introduce the program, and a former NSF Program Director will discuss common challenges faced and mistakes made in writing an S-STEM proposal.
- **Recruitment and selection:** We will discuss mechanisms to publicize S-STEM scholarships, avenues of recruitment, criteria for selection, and the selection process including lessons learned from a data-driven approach for selection.
- **Cohort building:** We will introduce proven strategies and lessons learned for building a cohesive cohort and will address challenges such as how to design cohort-based activities for students from different majors or class years. We will also discuss strategies for integrating new students into an existing cohort.
- **Remediation strategies:** We will discuss the importance of finding problems early, strategies for implementing proactive interventions, peer support structures, and the probation process.

Participants will then be invited to share their experiences and engage in a discussion about developing successful S-STEM projects in topic breakout groups. Participants will be invited to continue discussing S-STEM after SIGCSE by joining a Slack workspace dedicated to S-STEM best practices and lessons.

2 EXPECTED AUDIENCE

The audience is expected to include PIs who have ongoing S-STEM awards and prospective PIs who are interested in applying for S-STEM funding. We anticipate an audience of 25 people.

3 DISCUSSION LEADER(S)

The discussion will be led by the following people:

- Sami Rollins and Alark Joshi, University of San Francisco
- Amruth Kumar, Ramapo College of New Jersey
- Stan Kurkovsky, Central Connecticut State University
- Tracy Camp, Colorado School of Mines

4 EXPERTISE OF DISCUSSION LEADER(S)

Sami Rollins is a former NSF Program Director and co-PI of an ongoing S-STEM project at the University of San Francisco. During her service at NSF she also served as co-lead of the S-STEM program.

Alark Joshi is co-PI of an ongoing S-STEM project at the University of San Francisco.

Amruth Kumar is co-PI of an ongoing S-STEM project at Ramapo College of New Jersey.

Stan Kurkovsky has been co-PI of four S-STEM projects, including an ongoing multi-institutional collaboration.

Tracy Camp is co-PI of an ongoing S-STEM project at the Colorado School of Mines and has a second S-STEM proposal pending.

5 PROPOSED ACTIVITY DURING BOF

The plan for the session is as follows:

- **5 minutes** - Introduction to the S-STEM Program
- **10 minutes** - Session leaders introduce common challenges and lessons for their assigned topic
- **20 minutes** - Breakout group discussion
- **10 minutes** - Breakout groups report out common/critical issues discussed
- **5 minutes** - Wrap up and invitation to join Slack workspace

Each session leader will facilitate one of the following breakout groups: solicitation requirements; recruitment and selection; cohort building; and remediation strategies. Participants may join any breakout group of interest. During the report out period, session leaders will highlight the common or most critical issues discussed in their group for all participants.

REFERENCES

- [1] Rahman Tashakkori, Cindy Norris, and Mary E. Searcy. 2018. The Components of a Successful S-STEM Program: What Works at Appalachian State University. In *Proceedings of the 49th ACM Technical Symposium on Computer Science Education* (Baltimore, Maryland, USA) (SIGCSE '18). Association for Computing Machinery, New York, NY, USA, 362–367. <https://doi.org/10.1145/3159450.3159600>
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