S-STEM Scholars, a Second Generation: Support for At-risk Upper Division and Transfer Students in CEAS

Andrew A. Kline  
*Western Michigan University, andrew.kline@wmich.edu*

Betsy M. Aller  
*Western Michigan University, betsy.aller@wmich.edu*

Follow this and additional works at: [https://scholarworks.wmich.edu/acad_leadership](https://scholarworks.wmich.edu/acad_leadership)  
Part of the [Chemical Engineering Commons](https://scholarworks.wmich.edu/chemical_engineering), and the [Industrial Engineering Commons](https://scholarworks.wmich.edu/industrial_engineering)

**WMU ScholarWorks Citation**  
[https://scholarworks.wmich.edu/acad_leadership/35](https://scholarworks.wmich.edu/acad_leadership/35)
S-STEM Scholars, a Second Generation: Support for At-risk Upper Division and Transfer Students in CEAS

Andrew A. Kline and Betsy M. Aller
WMU College of Engineering and Applied Sciences

The S-STEM Scholar Program at WMU

Background on Program
Begun in 2010, the S-STEM Scholar Program increases opportunities for financially needy but academically talented students. These students:
- Are first-time, first-year students
- Demonstrate financial need through FAFSA applications
- Will enter a major in the College of Engineering and Applied Sciences
- Have a math ACT of 24 or above

2 have been retained in the CEAS but did not meet GPA

S-STEM Scholars Opportunities and Research Questions

S-STEM Scholar Program objectives are:
1. To provide scholarships so recipients can devote full-time attention to academic studies and participate in student development activities without outside employment distraction, and
2. To provide professional development activities to connect scholarship recipients to other students and faculty, and to the engineering and applied sciences professions.

S-STEM Scholar Opportunities

S-STEM Scholars choose one of three professional development opportunities when they apply to the program; students can switch each new academic year if they wish:
1. Undergraduate research: Students learning engineering through experience and develop the habits and skills of a researcher. S-STEM Scholars get help finding an undergraduate research project but are expected to also be proactive in seeking such projects.
2. Student organizations of professional societies: Scholars are expected to join and be active participants in at least one of 34 such organizations on campus.
3. Chosen mostly by 2nd-year students and later, an excellent option for students to gain on-the-job experience, connect learning in the classroom to professional practice, and develop communication, teamwork, and leadership skills.

Phase I: Results of S-STEM Scholars Program

From Fall 2010 through Fall 2013, the S-STEM Scholar Program provided scholarships to 33 CEAS students, for a total of over $300,000. Of these 33 students:
- 22 have been retained in the CEAS and in the S-STEM Program
- 2 have been retained in the CEAS but did not meet GPA requirements (≥2.7) to continue in S-STEM Scholars
- 2 are retained at WMU but in non-STEM majors
- 2 were no longer financially in need
- 1 transferred from WMU
- 1 left WMU for unknown reasons
- 3 have left WMU for poor academic performance

Thus, 79% of S-STEM Scholars have been retained in the College of Engineering and Applied Sciences (CEAS).

Phase II: At-risk and Transfer Students

Research as well as faculty experience with the ongoing MI-LSAMP (Louis Stokes Alliance for Minority Participation) program has shown that students often hit a financial roadblock by their junior or senior year, causing them to work more and take fewer credit hours. This can delay time to degree, or they may not finish at all.

Phase II proposes to focus on junior- and senior-level students who have shown commitment to STEM majors and show financial need. Another main goal is to focus on diversity and less traditional students, which includes transfer students.

Partners in the Phase II proposal will include MI-LSAMP, the WMU Admissions Office, and the CEAS Advising Office. MI-LSAMP has partners with nine community colleges and will provide networking opportunities to identify and attract quality candidates.

Table 1 shows the demographic target or potential head count for Phase II of the S-STEM Scholars Program. Note the differences between admitted students and actual enrollments in CEAS for under-represented minorities (URM).

| Source | WMU Office of Institutional Research, Fact Book for appropriate year.
| CEAS STEP First-year Program, May 2013, Year 4 Programmatic Retreat materials.

Contact Information, Acknowledgements, and Disclaimer

Andrew A. Kline, PhD
Dept. of Chemical and Paper Engineering, WMU
Andrew.kline@wmich.edu; 269.276.3316

Betsy M. Aller, PhD
Dept. of Industrial and Manufacturing Engineering, WMU
Betsy.aller@wmich.edu; 269.276.3354

Support for the S-STEM Scholars Program at WMU has been received from the National Science Foundation (NSF) under S-STEM Grant 0965962. Any opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of NSF.