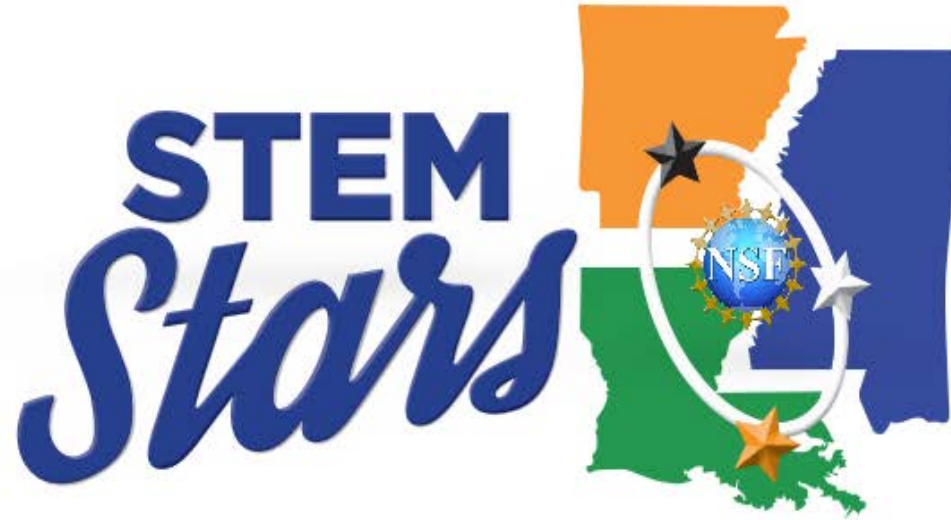


A School/University Partnership



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Professor of Chemistry

March 7, 2023



The STEM STARS School/University Partnership



Goal

The research question guiding STEM STARS:

Will training STEM graduates via STEM STARS have a significant effect on the quality of science and mathematics K12 instruction, teacher efficacy and satisfaction, STEM teacher retention, and students' science and mathematics achievement?



The STEM STARS School/University Partnership Annual Meetings





The STEM STARS School/University Partnership

OBJECTIVES

1. Create a high-quality, rigorous, and clinically based science and mathematics teacher preparation program for aspiring middle and secondary science and mathematics teachers
1. Recruit, prepare, employ, and support an increased number of diverse (e.g., African Americans), high-quality, effective middle and secondary science and mathematics educators in high-need urban and rural schools
1. Expand the Cyber Mentoring Network - a connected community of science and mathematics teachers working in high-need school districts
1. Contribute to the knowledge base on the effectiveness of clinically based science and mathematics teacher preparation programs for middle and secondary classrooms in urban and rural schools



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FOCAL AREAS FOR THE EVALUATION

1. Determine the formative/implementation status of proposed activities as indicative of program fidelity
1. Ascertain and document summative impacts (results and outcomes) and accomplishments as a trajectory toward success
1. Identify facilitators and challenges that influence implementation and results
1. Consider the STEM STARS emerging model as contextually based across the three sites
1. Provide recommendations that address challenges and enhance goal attainment



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Student Participants

STEM STARS successfully recruited 120 students who were enrolled in five cohorts. All but two of these students obtained a science or mathematics certification and are currently teaching in high-need schools.



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PARTICIPATING ORGANIZATIONS

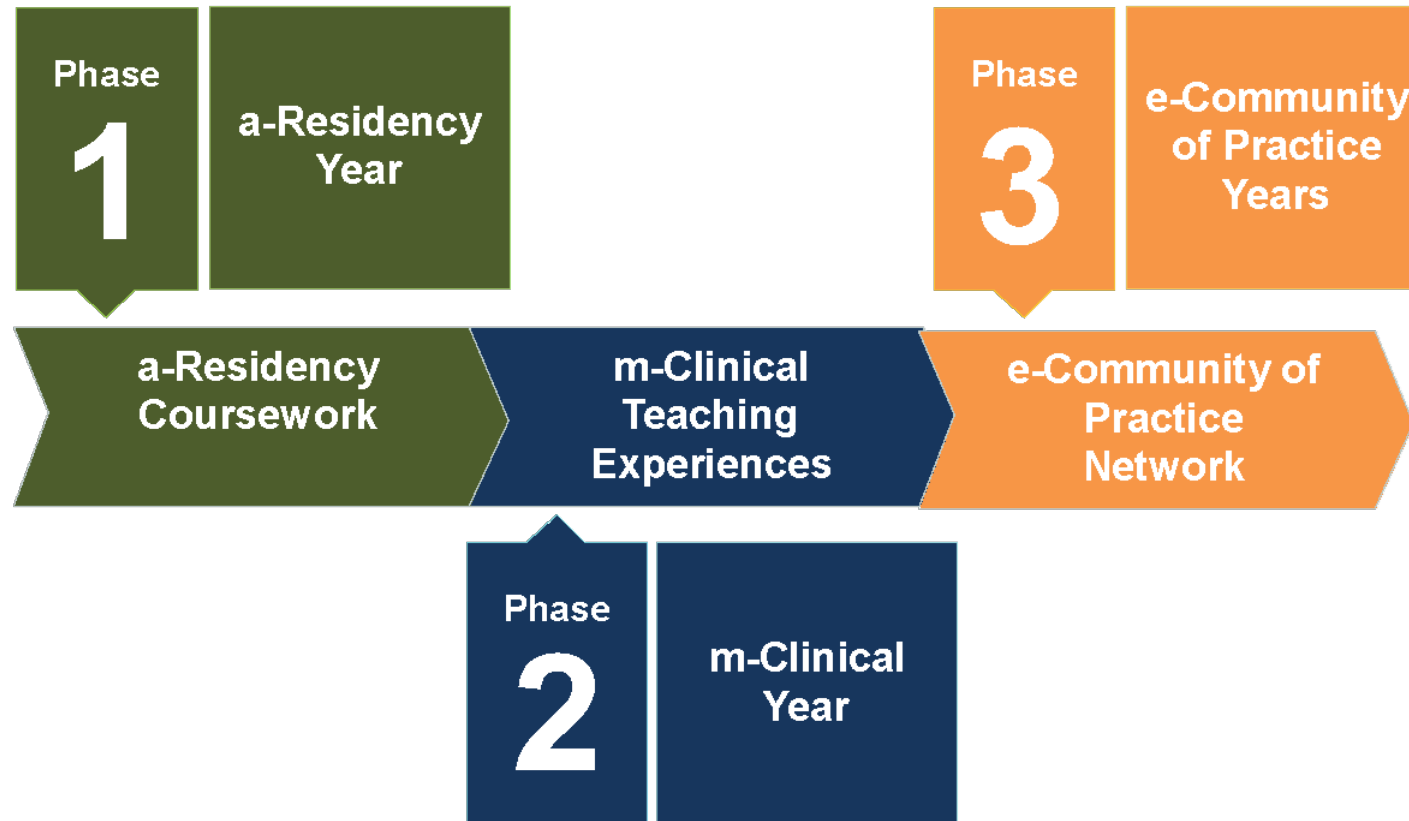
The partnership included:

- Three (3) universities (three HBCUs)
- One (1) university affiliated research center
- Twenty-three (23) high-need schools with a shortage of science and mathematics teachers and a significant number of teachers teaching in areas for which they were not certified



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The STEM STARS Model Science and Mathematics Teacher Support System





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Prospective science and mathematics teachers experiencing active learning during Phase 1



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Teachers sharing rewarding and challenging classroom experiences



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A Community of Practice networking activity

The STEM STARS Partnership

Proposed Implementation



Teachers' Opinion

| Program Aspect. (Scale 1 to 5) | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|
| Mentor-mentee interactions | 4.03 | 3.96 | 4.02 | 4.06 | 4.50 |
| STEM STARS community | 4.00 | 3.88 | 4.10 | 3.98 | 4.19 |
| Academic training program | 3.90 | 4.12 | 4.42 | 4.39 | 4.50 |
| Residency component | 3.61 | 3.80 | 3.88 | 3.92 | 4.14 |
| Clinical component | 3.59 | 3.66 | 3.85 | 3.86 | 4.00 |
| NBPTS activities | 3.43 | 3.22 | 3.20 | 3.38 | 3.81 |
| Cyber mentoring@ | | | | 3.77 | 4.00 |

10 Ways to Create Effective Community Partnerships

Source: <https://www.careinnovations.org/resources/10-ways-to-create-effective-community-partnerships/>

wisdom of practice

1. Establish a personal connection

1. Be honest

1. Show up

1. Schedule regular check-ins

1. Take time to grow relationships

10 Ways to Create Effective Community Partnerships

Source: <https://www.careinnovations.org/resources/10-ways-to-create-effective-community-partnerships/>

STEM STARS Partnership Reflections

Wisdom of Practice

1. Practice the power of the pause

1. Consciously uncouple

1. Offer incentives to people with lived experience who share their story

1. Prepare to have some uncomfortable conversations

1. Craft community agreements



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CONCLUSIONS

Research suggests that a diverse teacher workforce is essential in closing the socioeconomic achievement gap between students in high-need schools and their counterparts.

STEM STARS is an innovative, research-driven teacher preparation project designed to increase the number, quality, and diversity of science and mathematics teachers in high-need school districts in the three-state region.

STEM STARS' implementation offers strategies on how to recruit, prepare, and place science and mathematics teachers in high-need school districts; critical to addressing the science and mathematics teacher shortage.

STEM STARS is a potential model whereby the knowledge gained about emerging and best practices can be broadly shared with other stakeholders to make a meaningful difference in the teaching and learning environment.

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