

Culturally Responsive Science Learning: An Evidence-Based Approach in the Rural South

This partnership project is designed to evaluate whether culturally responsive project-based science learning proactively impacts high-need rural secondary school students in the rural South of the United States. This project implements and evaluates Crafting Engaging Science Environments (CESE), an innovative science intervention for chemistry and physics high school students, to a new population of high-need students in US southern rural schools. Working in partnership with HBCUs Alabama A&M and Winston Salem State University, Michigan State University, and Northwestern University this project asks: **Can CESE can be replicated with a new population of high-need students who attend public schools in the rural South, including schools in Alabama and North Carolina?**

Why the rural South?

1 in 6 students in the rural South live below the poverty line, and students face various associated academic challenges. Implementing CESE may improve students' science academic performance, keep students on track to successfully complete science gatekeeper courses, and strengthen their academic portfolio for admission to a two- or four-year higher education institution or technical school.



This science learning approach integrates project-based learning and culture-based approaches:

In **project-based learning**, students:

- Pursue solutions to meaningful questions
- Explore questions by participating in scientific practices to examine why phenomena occur and learn important disciplinary ideas
- Engage in collaborative activities
- Create artifacts to answer the question

Culture-based approaches:

- Integrate students' cultural resources and experiences into the teaching and learning of science
- Seek to make science more identifiable, relevant, and meaningful to students by connecting it to their lived experiences, cultures, and histories

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