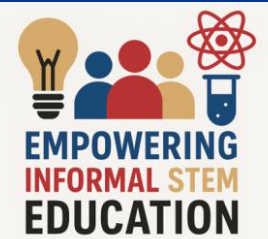


Why do some schools have high participation rates in the science fair while others are uninvolved?



ECR Hub
EDU Core Research



#2422507: Investigating Barriers to and Designing Activities and Tools for Broadening Participation in the Tulsa Regional Science Fair among Underrepresented Students in Northeast Oklahoma

Background

TULSA REGIONAL SCIENCE FAIR

The Tulsa Regional Science Fair (TRSF) is open to 7-12th grade participants living in Tulsa and Creek counties in NE Oklahoma.

Since fair was rejuvenated in 2019, very few participants from Tulsa Public Schools and Creek County Public Schools

Fall 2025: Completed a series of 3 'scientific method' outreach activities at schools with **zero** prior participants in TRSF

Spring 2026: Interviewed students from science classes at two locations: 1) a school with a **strong** history of participation in TRSF and 2) a school with **zero** history of participation in TRSF

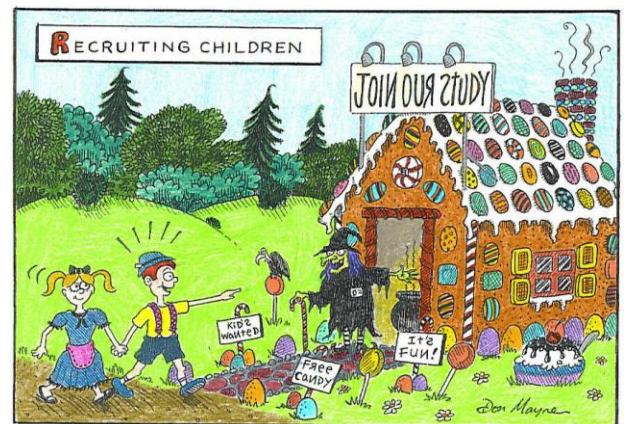
Ongoing: Use interview transcripts as practice coding exercises for PI, prepare survey for Fall 2026

What is Yet Unknown

How do the outreach interventions impact student motivation, self-efficacy, and agency with respect to science fair participation?

How do AI/LLM resources help students identify and develop science fair project topics and shape the experience of participants?

How do the six dimensions that make up agency in learning correlate within school cohorts



Methods:

Year 1: Qualitative

Year 2: Quantitative

- Will collect pre- and post-activity assessments
- Interviews used as coding practice for PI and to inform survey development
- **PI has a physical science background (learning a LOT)**

Challenge Area

Pre-Approvals

Getting site pre-approvals from principals, teachers, and school districts has been difficult
→ need to have these secured to begin
IRB process

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Laura Ford – Chemical Engineering
Emily Mortimer – TRSA



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Tulsa Regional
STEM Alliance

