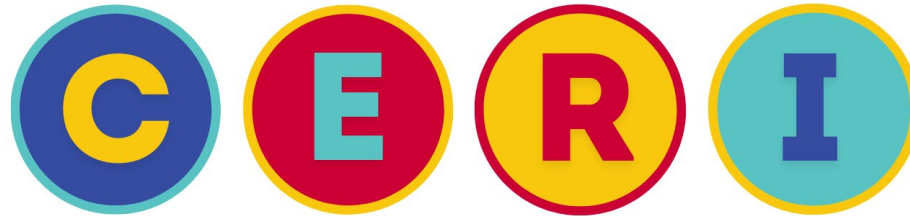


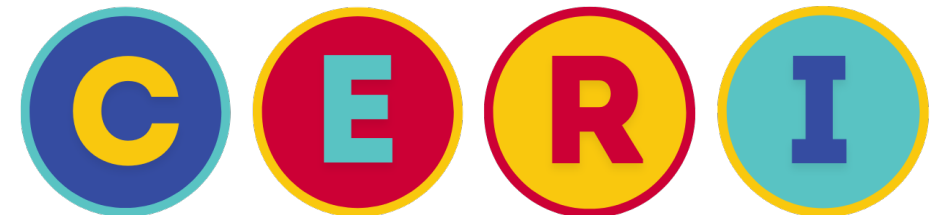
**CONSORTIUM ON EDUCATIONAL  
RESEARCH & IMPROVEMENT**



# Research and Evaluation at the West Dallas STEM School (WDSS)



Karen Pierce, Annie Wright, Jessica Murillo  
Southern Methodist University



# Presentation Overview:

- Project Overview
- Project Evaluation
- Research Substudies



# Project Overview

- SMU serves as the backbone for research and evaluation of the WDSS project.
- The project focuses on research to practice, replicable model development, and continuous improvement.
- The project team learns from both successes and failures.
- Alignment of stakeholder goals with community needs is integral at the WDSS.



Where We Started

**Why West Dallas**

**Phase I**

Planning

Initial Implementation

**Phase II**

**Phase III**

Full Implementation and  
Ongoing Improvement



# Driving Possibilities

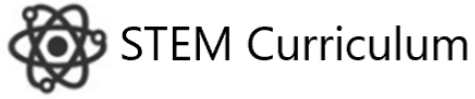
- The WDSS is the inaugural STEM school supported by the Toyota USA Foundation.
- Special focus is given to replicating and documenting success.
- Toyota has announced expansion to nine replication sites nationwide.



**TOYOTA**  
**USA FOUNDATION**  
Investing in a smarter tomorrow.



# Key Project Components



STEM Curriculum



Wraparound Services



Professional Learning



Research and Evaluation

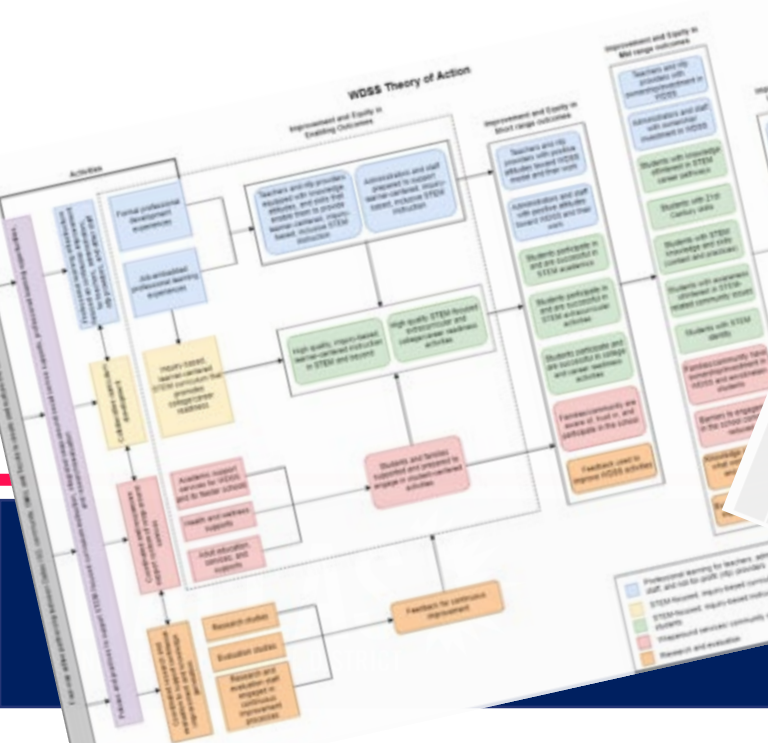
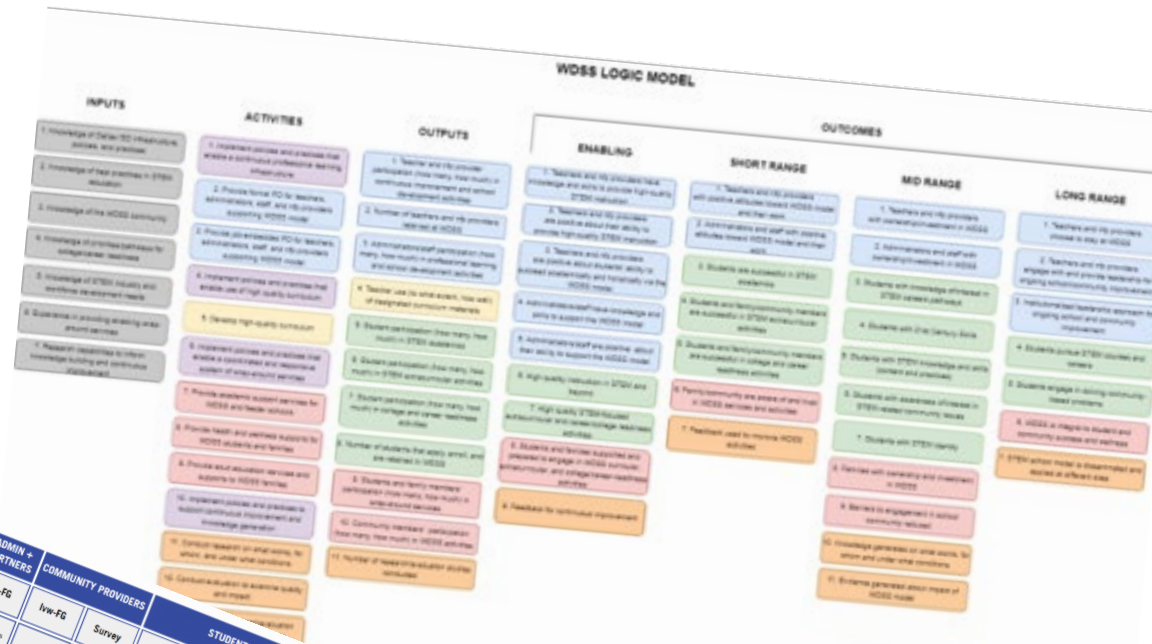


Ongoing Partnership

- Interdisciplinary learning, inquiry- and project-based learning, technology integration, inclusivity and accessibility
- Basic needs, academic support, enrichment, community engagement, adapting to local context and evolving needs
- Cross-team and organizational collaboration, professional development for inquiry, alignment to the WDSS instructional vision
- Generate educational knowledge, link implementation to outcomes, identify implementation driver, iterative improvement
- Collaborative problem solving, testing project components to ensure scalability, efficiency and targeted expertise

# Project Evaluation

- Logic Model
- Theory of Action
- Data Matrix



**SMU Center on Research and Evaluation**

**WSSS LOGIC MODEL**

**WSSS TEACHERS**

Iwv-FG	Survey	HRI Obs	ADMIN - PARTNERS	Iwv-FG	COMMUNITY PROVIDERS	Iwv-FG	Survey	STUDENTS	FG	Survey	Ext	FG/fw	Survey	Doc review	General obs	Program data	Project data	
Interview/ Focus groups: teachers	Teacher baseline survey	Observations of instruction	Focus groups and interviews (teachers, admin, industry)	Interview: nfp provider	NFP PD vendor feedback and insights survey	Focus group: 3rd, 5th, 8th grade students	Student Surveys - 3rd-8th grade	CHSD entry	Focus group: parents	Parent-education surveys	Document review (curriculum + PD materials)	Observations of project meetings/professional learning opportunities	Participation in C2D and extracurricular (and high-ground) activities	Project data about key activities, supports, other tracking				

**Focus Area 2: To what extent is WSSS making progress toward its enabling and short-range outcomes? (Continued from previous page)**

Q15	To what extent do students and families feel they are supported and prepared to engage in college/career readiness activities? How does that change over time? (E8)	HRI																
Q16	To what extent is the research and feedback providing useful information for improvement? How does that change over time? (E9)	HRI																
Q17	To what extent are students successful in STEM academics, career and college readiness activities? (S3-4, students only)	HRI																
Q18	To what extent do teachers and nfp providers have ownership and investment in WSSS, and how does that change over time? (M1)	HRI																
Q19	To what extent do administrators have ownership and investment in WSSS, and how does that change over time? (M2)	HRI																
Q20	<b>PRIORITY MEASURE 2 OF 2:</b> What is the impact of the WSSS model on students: (1) knowledge of and interest in STEM pathways and careers, (2) STEM 21st Century skills (content and practices), (3) STEM-related awareness and interest in STEM-related community issues, (4) STEM identity, (5) intent to pursue STEM courses and careers, and (6) intent to engage in solving community-based problems? (M3-7, L4, L5)	HRI																





# Project Evaluation

- **Focus Area 1:** To what extent is the WDSS model likely to lead to improvement and equity in its outcomes? (Inputs and Activities)
- **Focus Area 2:** To what extent is WDSS making progress toward its enabling and short-range outcomes?
- **Focus Area 3:** To what extent is WDSS making progress toward its mid- and long-range outcomes?

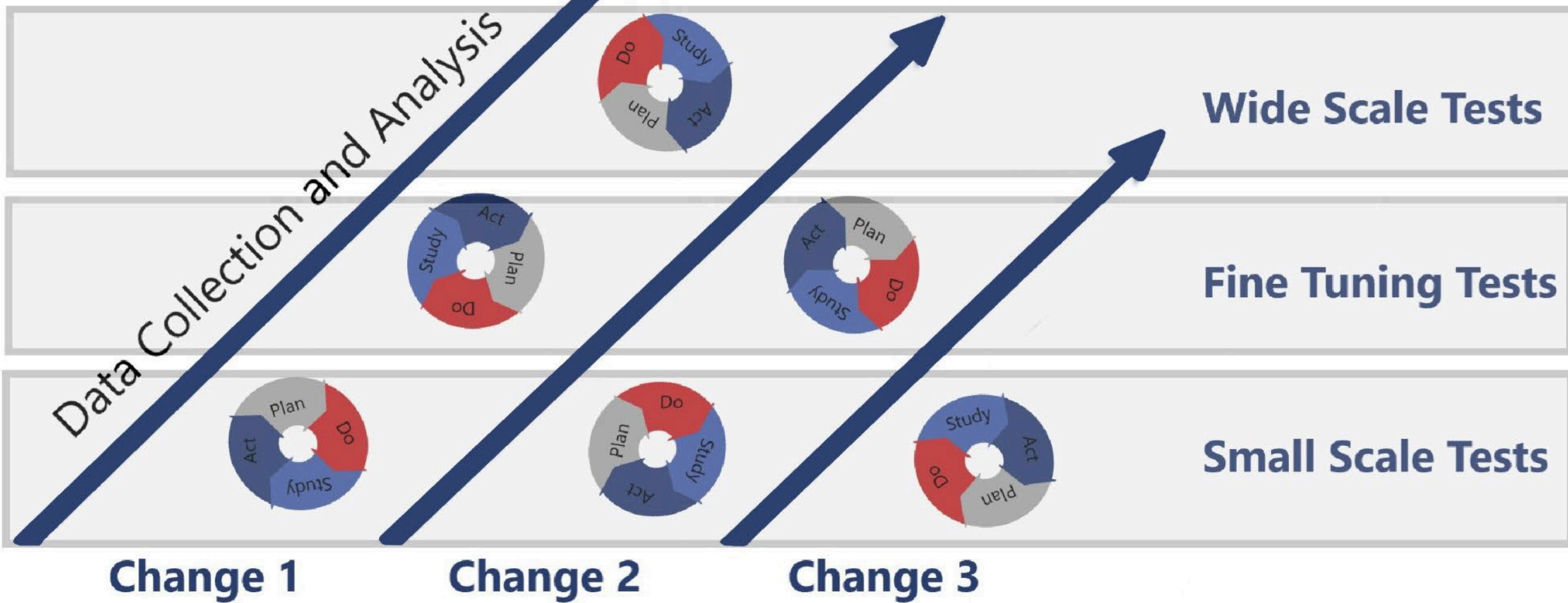
# Learning from Success and Failure

- If innovative projects work, replication often remains a challenge.
- If they don't, projects are abandoned without learning from failures.

Successes (↑)	Failures (↓)
↑ High expectation for all students	↓ Low overall alignment to instructional vision
↑ Connection to prior knowledge	↓ Connecting, Elaborating, and Reflecting was only observed once
↑ Progress in collegial working relationships	↓ Sensemaking is generally lacking

# Continuous Improvement

## Full Implementation



# Research Substudies

- Consent processes
- Alignment of research to practice
- Higher education institute and district collaborations
- Contributions to the field of education
- Action research



# Research Substudies

- Student STEM Discourse
- Interactive Physics Simulations
- Science PLC Practices and Efficacy
- STEM Instructional Coaching Analysis
- Research on Integrated STEM Efficacy
- School-University-Community Research
- Operationalizing Professional Development
- Learning Through Gaming Augmented Reality Literacy



# Key Takeaways

- SMU's backbone role provides stability and resources.
- The WDSS model focuses on documenting processes and learning from all outcomes.
- Continuous improvement and understanding local contexts are key to success.





**Karen Pierce, [karenp@smu.edu](mailto:karenp@smu.edu)**  
**Annie Wright, [anniew@smu.edu](mailto:anniew@smu.edu)**  
**Jessica Murillo, [murilloj@smu.edu](mailto:murilloj@smu.edu)**

**CONSORTIUM ON EDUCATIONAL  
RESEARCH & IMPROVEMENT**

