

smART::ART Integrated Formal and Informal STEAM Education



Contact

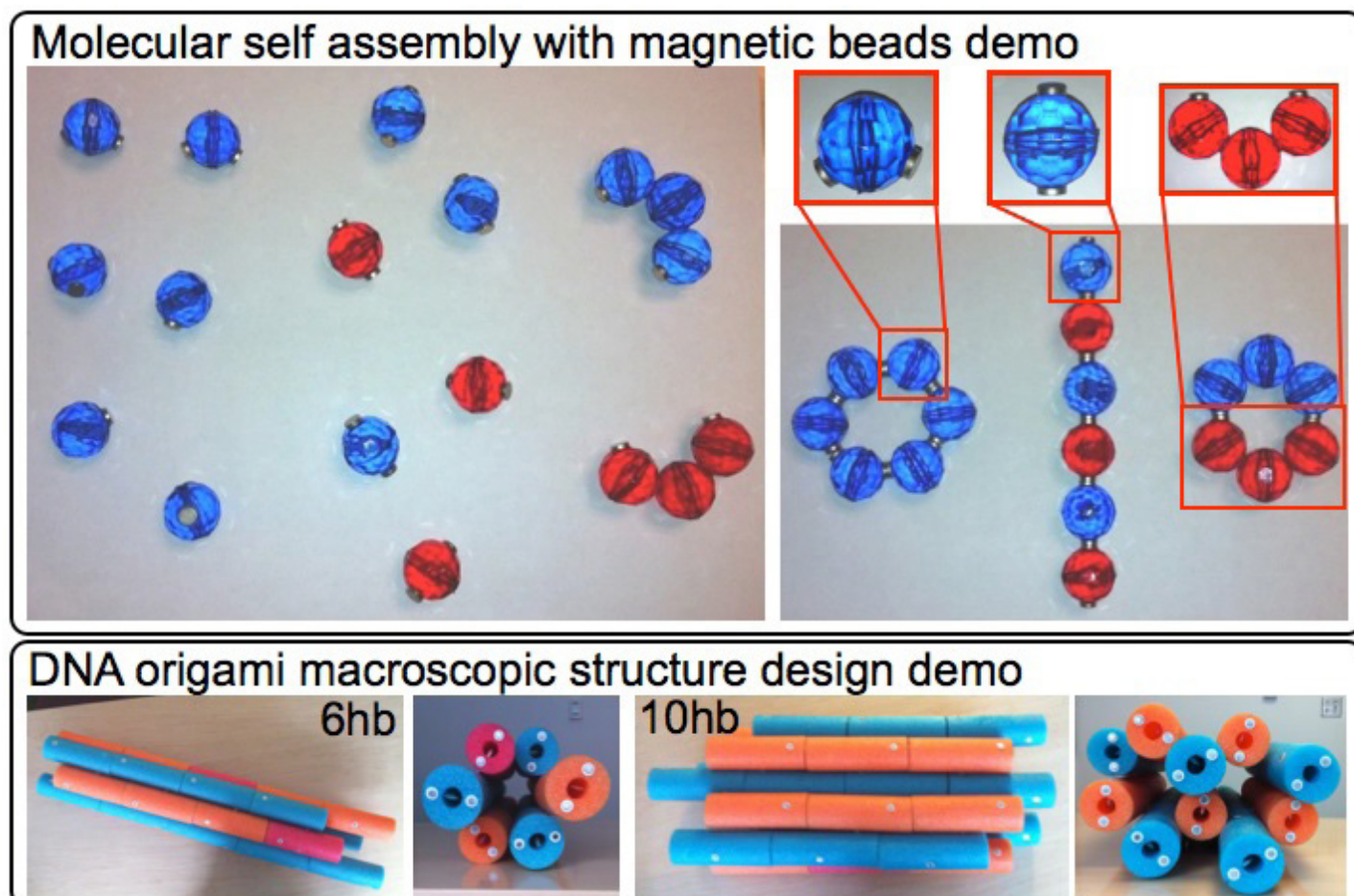
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Ohio State Colleges/Units Involved

Mechanical and Aerospace
 Engineering
 College of Engineering
 - Engineering Education
 Innovation Center
 Minority Engineering Program
 College of Education and
 Human Ecology

Community Partners Involved

COSI
 Diversity, Inclusion & Partnerships
 Teen Programming
 Beta by Design 501(c)(3) education
 organization
 Hilltonia Middle School
 Columbus City Schools
 Metro Early College Middle School



Purpose

Engineering is an inherently creative process. This project seeks to engage underrepresented populations in those creative processes and in so doing, generate a better understanding of the interrelated domains of engineering, science, technology, and visual art. Due to fear and/or lack of exposure to STEM concepts at a young age many creative people shy away from anything STEM-related and self-select the arts. The project will create a pool of students and teachers who think critically about multi-faceted issues, make informed decisions, and solve problems creatively using engineering skills and habits of mind.

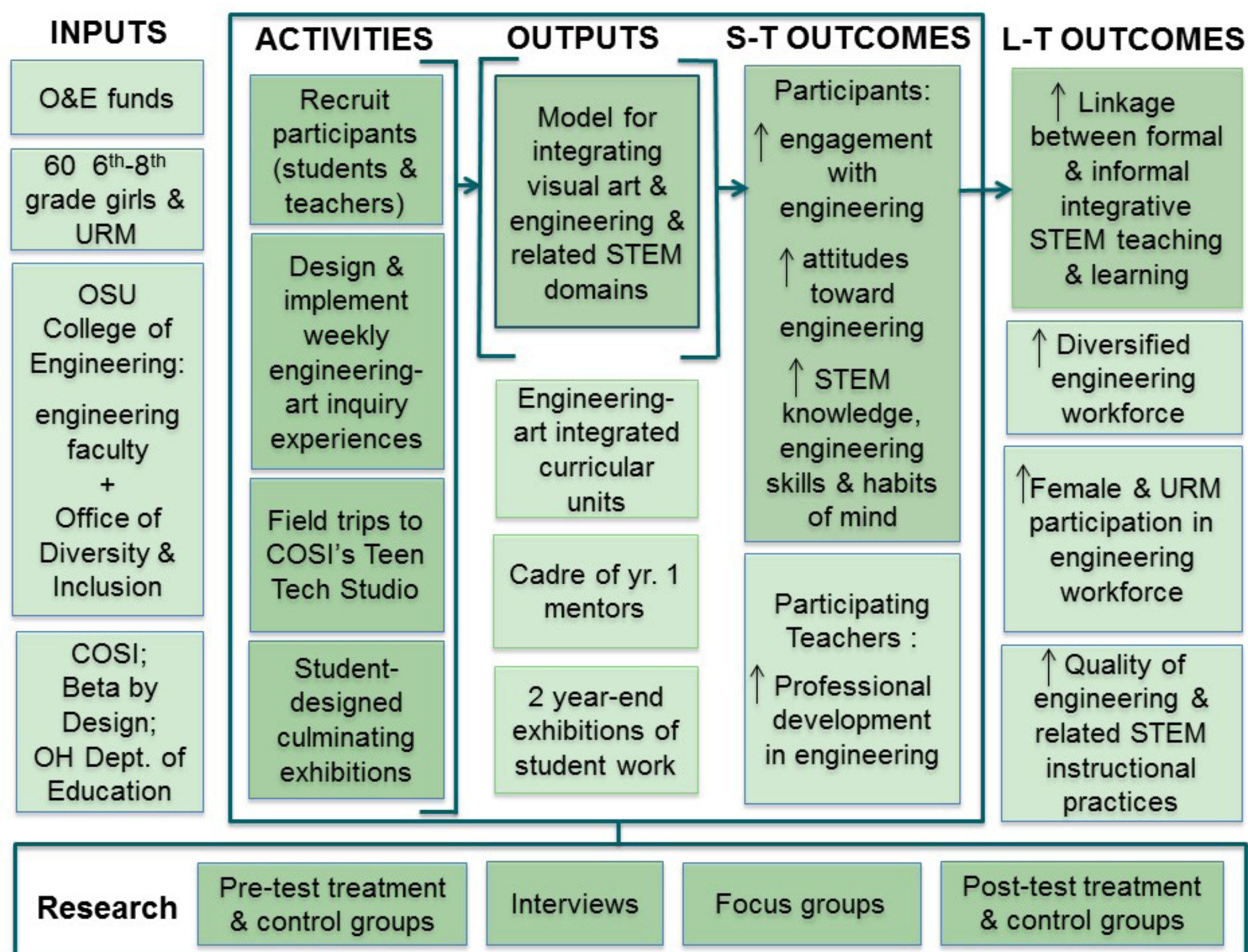
Impact

The project's significance extends beyond creating a replicable engineering-art integrated set of activities or curriculum. This program creates a research-based model for addressing three critical challenges in today's K-12 schools:

(1) attending to the STEM learning needs of high-need populations and diversifying participation in the future engineering workforce.

(2) Teaching design and engineering skills across the curriculum to meet the related demands of the Common Core State Standards in math, Ohio's New Science Learning Standards, and college/career expectations.

(3) Integrating the creative arts into science to expand students' spatial thinking skills as well as their imagination and innovation capacities in authentic interdisciplinary ways.



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