

A Collective Impact STEM Integrated Communities (CISTEMIC) Initiative



THE PROBLEM



Over **500,000**¹ open computing jobs nationwide



By 2028, **2.5M**² advanced manufacturing and **2.72M**³ data science and analytics jobs will need to be filled



By 2028, Advancements in artificial intelligence (AI), automation, robotics, and machine learning will cause **47%** of present-day jobs to disappear or completely transform the future of employment⁴



Our children are being taught **20th-century skills** using **19th-century pedagogy** for an accelerating **21st-century global economy**

Research reports gaps and inequities in the following areas^{5,6,7}:

- 1 21st-century knowledge and skills,
- 2 STEM-qualified workers for STEM-related fields,
- 3 Access to high-quality STEM learning opportunities,
- 4 STEM workforce underrepresented minority groups
- 5 Stakeholder collaboration in education, workforce development, and economic development.
- 6 Isolated education system efforts integrating STEM education.

A comprehensive STEM plan with all hands on deck.

THE SOLUTION

The TechTrep comprehensive STEM approach utilizes Collective Impact STEM Integrated Community (CISTEMIC™) initiatives led by school districts and empowered by the local community. Meaning CISTEMIC assists districts to organize and plan alongside all stakeholders, to launch and sustain a community-wide STEM initiative, leading to region-wide STEM education, workforce, and economic vibrancy and vitality.

TechTrep's comprehensive STEM approach specifically supports school districts and their communities in the following ways:

- 1 **Early STEM Engagement:** Engages ALL 4th to 8th-grade^{4,8}, students with unlimited in/out-of-school access to the entire TechTrep online STEM-related catalog.
- 2 **Built-in Mentoring:** Courses are self-directed and self-paced, affording seamless opportunities for teachers, community partners, and students to become mentors/coaches in school, after-school, and out of school.
- 3 **STEM-District Visioning:** The CISTEMIC™ visioning, execution, and professional development services assist districts in transforming themselves into a STEM-district by leveraging stakeholders in workforce and economic development activities.
- 4 **STEM-Region Scalability:** The digital platform provides high-quality, affordable, scalable, and sustainable STEM-related resources to assist in transforming a community into a globally competitive place to live, work, and play.
- 5 **21st-Century STEM Workforce and Economic Development:** Organize community partners to provide students real-world learning opportunities, solving pressing business and social challenges with 21st-century skills in critical thinking, problem-solving, creativity, and communication.

SEE FOR YOURSELF

[STEMTown, Wallingford, CT.](#) | [Ford Heights, IL](#) | [Students Speak](#) | [TechTrep Overview, a student creation](#)

(1) <https://code.org/promote> (2) BLS Data, Oxford Model, Deloitte Manufacturing Skills research initiative (3) <https://www.pwc.com/us/en/publications/assets/investing-in-america-s-dsa-talent-bhef-and-pwc.pdf> (4) https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf (5) STEM 2026: A Vision for Innovation in STEM Education (2016). https://innovation.ed.gov/files/2016/09/AIR-STEM2026_Report_2016.pdf (6) Women, Minorities, and Persons with Disabilities in Science and Engineering (2017). <https://nsf.gov/statistics/2017/nsf17310/digest/about-this-report/> (7) Charting a Course for Success: America's Strategy for STEM Education (2018). <https://www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf> (8) Why Do Girls Lose Interest in STEM? (2018). <https://news.microsoft.com/features/why-do-girls-lose-interest-in-stem-new-research-has-some-answers-and-what-we-can-do-about-it/>