CURATED PATHWAYS TO INNOVATION™

A personalized learning platform to broaden and diversify the STEM+C pipeline

2020 – 2021 Impact Report





THE SOLUTION THAT SETS WOMEN AND MINORITIES ON THE PATH TO SUCCESSFUL STEM+C EDUCATION AND CAREERS

OUR MODEL

Curated Pathways to Innovation (CPI[™]) is a web-based personalized learning platform which acts as a "virtual guidance counselor". It uses cutting edge technology through machine learning, artificial intelligence, and gamification to inspire, instruct, and incentivize students — emphasizing skills in computer science. The platform allows students agency to select activities that engage and motivate them while building their unique STEM+C pathway to college and future careers.

The CPI[™] platform helps broaden participation in STEM+C by providing the following:

- Access to learning they may not otherwise get where programs are not available
- A personalized learning pathway which builds their skills, awareness, and self-efficacy
- Self-paced tools to practice and learn

In the U.S. today, we have a supply and demand issue where we don't have enough students who are entering and interested in pursuing STEM+C disciplines. When we analyzed why the needle is moving backward, we found that using technology to deliver recommendations to every student individually through personalized learning is effective.

 JANICE ZDANKUS, CPI™ Co-Founder and Vice President, Hewlett-Packard Enterprise





THE ISSUE

WHY BROADEN PARTICIPATION?

By focusing on underrepresented populations, those who are African American/Black, Latino, American Indian/Alaska Native, and on female students in computing, science, and engineering pathways, the CPI[™] platform has proven impact on immediate preparation for high school, college, and reskilling for jobs. The project piloted initially in east San Jose, California and as of 2021 is now covering all STEM+C disciplines in nine states across the country and Canada.

The under representation of minorities and women in STEM+C greatly impacts U.S. competitiveness. There are thousands of STEM-focused educational programs. However, there is no common unified platform to measure their impact consistently. CPI serves as a single platform providing students one place to build their STEM+C pathway to college and career - allowing accountability throughout the journey.

Less than 13% of computer degrees in the U.S. are earned by underrepresented populations (African Americans/Blacks, Hispanics/Latino(a), and Native Americans/Alaskan Natives and Females)

United States Department of Labor, Bureau of Labor and Statistics for Computing and Information Technology



This is not about getting underrepresented groups into technology as a 'nice thing to do'. It's about helping build equitable opportunity, economic sustainability, and greater innovation that impacts business outcomes. 99

- LESLEY SLATON BROWN, CPI[™] Co-Founder and Chief Diversity Officer, Hewlett-Packard Inc.



THE SOLUTION

WORKING TOGETHER HAS CREATED A GREATER IMPACT TO DEVELOP SOLUTIONS THAT ARE SCALABLE GLOBALLY.

CPI[™] benefits non-profits, corporations, educational institutions, government, and students by providing greater exposure, a networked effort, and measurable results through collaborative and simplified pathway.

CPI[™] incentivizes and enables a student's success around their STEM+C educational journey. A robust recommendation algorithm guides them on their individual paths and helps them make critical choices along the way. With hundreds of badges and even more activities to choose from, students are inspired and build their self-awareness, self-efficacy, interest, aspirations, and preparation in STEM+C college and career pathways as their learning progresses.

IT'S A CRADLE-TO-CAREER PROCESS

Awareness, curiosity and learning about STEM+C subjects starts at Pre-K and extends through college and career. Research shows most students lose their interest in pursuing computing and math careers by middle school age. Many programs only address 1-2 phases of this process — CPI[™] aggregates resources to assist students on the journey from education to career.



When I first started, and the students were doing coding they needed a lot of support. And now students have more perseverance. They have really adopted that fail forward mindset and they now just have so much more exposure. They can see themselves in these careers and they feel confident about a future in technology.

> – MS. REBECCA BALASTER, Teacher Ocala STEAM Academy, San Jose, CA

THE IMPACT

CPI™ DEMONSTRATES STATISTICALLY SIGNIFICANT RESULTS FOR UNDERREPRESENTED STUDENTS.

Analysis, performed by research partner University of Notre Dame, of over three years of longitudinal data of the outcomes from using CPI[™] shows increase in students' motivation, aspiration, and persistence in STEM+C, and sustaining increase for females.

In contrast, nationally and historically, research shows student interest in STEM+C steeply declines, particularly for AHNF populations in the same age/grade levels.

CPI™ results reverse this trend, are positive and potentially game changing.



I had a 2.3 GPA and am a first-generation college student. With barriers like these, it made it difficult to transition to where I am now. Curated Pathways does a great job of taking students like myself and providing a curriculum that not only teaches you what it is but also gives you the skills needed to pursue a career in STEM. I'm now a Fulbright Scholar, completing my PhD in C.S., and proudly working on CPI.

– EMMANUEL JOHNSON, Lead Platform Architect, CPI™

Spring 2017 – Spring 2021 CPI™ Student Performance



Over **126,000** Activities Completed

5,000 + Students Served

After one year in CPI[™] approximately half of students reported an increase in their attitudes towards STEM+C, specifically:





CPI™ ACCOMPLISHMENTS AND EXPANSION

The CPI[™] platform is reversing the needle for underrepresented populations by increasing their awareness, self-efficacy, interest, and aspirations in STEM+C college and careers.

2020 – 2021 Highlights include:

- Scaled the platform significantly with expansion into nine states and Canada.
- CPI[™] is used in formal and informal, in-school and after school and enrichment programs and camps
- Increased the capacity to serve up to grade 14 with plans to integrate dual enrollment college programs for high school users and developed a new user interface for participants in high school and beyond
- Expanded content to support re-entry into the workplace for underrepresented populations focused on high skill/high pay employment in STEM+C careers

What educators say about CPI™:

- 100% of teachers, who responded to an end of year survey, would recommend CPI™ to their colleagues
- "My ultimate goal is to expose students to STEM so they start to consider a STEM career at an early age. CPI helps me achieve this goal through the interactive activities."
- "It was good for students to see how computer science, math, and science are used in careers."
- "It fills the skills gap."

Call to Action: Join us with your support, financially, with volunteers or with partnership.

Contact: pgonsalves@yourywca.org

GRATEFUL FOR SUPPORT FROM:

FOUNDING PARTNERS













