CURATED PATHWAYS TO INNOVATION™

A Solution to Broaden and Diversify the STEM Pipeline through Disruptive Innovation & Collective Impact

2020
IMPACT REPORT

YWCA
IS ON A
MISSION

SETTING WOMEN AND UNDERREPRESENTED MINORITIES ON THE PATH TO STEM CAREERS.

OUR MODEL

A web-based app, **CPI™** acts as a "virtual guidance counselor" and uses machine learning, artificial intelligence and gamification to guide and incent students – they can select activities that engage and motivate while building their curated STEM+C pathways.

The project plans to broaden participation in STEM+C programs and prepare students for the 21st Century workforce by utilizing an explicit, adaptive system enabled through technology to define and customize alternative STEM+C pathways, and to advise, lead, and track students in their continuing development.

The **CPI™** pilot project has been developing and testing a longitudinal advisory and tracking system, harnessing a networked community partnership, accountably impacting student choices, and transparently disseminating effective strategies in STEM+C student and career development.

❝ 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 disciplines. When we analyzed why the needle is moving backward, we found that we actually needed to use technology to deliver recommendations to every student individually through personalized learning. ❞

— JANICE ZDANKUS, CPI CO-FOUNDER, VICE PRESIDENT, HPE

TODAY, 70% OF COMPUTING DEGREES IN THE U.S. ARE EARNED BY WHITE MEN, YET THEY ONLY MAKE UP 30% OF THE POPULATION.

THE ISSUE

WHY UNDERREPRESENTED MINORITIES?

By focusing on underrepresented minorities, those who are African American, Latino, and American Indian/Alaska Native, and on female students in computer science and engineering pathways in Silicon Valley, the **CPI™** pilot project will have an impact on immediate preparation for jobs. The project has launched its efforts specifically in the East side of San Jose, CA with plans to expand future work to all STEM+C disciplines across the country.

The under representation of minorities and women in STEM+C persists, greatly impacting U.S. competitiveness. In Silicon Valley alone, a recent estimate counted over 100 local STEM education programs. However, no common platform currently exists for consistent and shared outcomes measurement.

" It's not about getting black people, brown people, black women or people with disabilities or veterans into technology 'just because'. It's a business imperative. Diversity increases the creativity and innovation in the workplace. **"**

— LESLEY SLATON BROWN, CPI CO-FOUNDER CHIEF DIVERSITY OFFICER, HP Inc

THE SOLUTION

WORKING TOGETHER WILL CREATE A GREATER IMPACT TO DEVELOP SOLUTIONS THAT ARE SCALABLE FOR THE REGION.

A clear path will benefit non-profits, corporations, educational institutions, government and students by providing greater exposure, a networked effort, measurable results and a simplified pathway.

The key ingredient of CPI™ is a platform that incentivizes and enables a student's success along their journey. A robust recommendation algorithm guides them on their individual path and helps them make critical choices along the way.

IT'S A CRADLE-TO-CAREER PROCESS
Getting underrepresented minorities and women interested in STEM learning and curious about the subjects and opportunities begins in Pre-K and extends through university to career. Many programs only address 1-2 phases of this process – they don't connect or aggregate resources to assist a participant on the journey from school to career like CPI™ does.

> " I was one of the very few women – let alone woman of color - in my computer science class. I'm passionate about making sure we solve the big, bold problem of racial and gender equity, and as a computer science graduate, I am part of leveraging technology to solve that problem. I get to work with students everyday who are learning all that is possible through digital skills. "

**— ALANKRITA DAYAL,
YWCA UI DESIGN ENGINEER, CPI**

THE IMPACT

Latinx students' self-efficacy in working with computers positively increased in statistically significant results.

Currently, **CPI™** pilot project has had the ability to gather and analyze over 2 years of data to assess the results of the pilot on sustaining student motivation and persistence. The results are positive and encouraging.

As of the end of the 2018-2019 School Year, our analysis shows that Curated Pathways is **increasing students' motivation and aspiration in pursuit of computing and STEM, and sustaining it for girls**, when national research shows student interest in STEM+C steeply declines, particularly for underrepresented minorities and girls, in the same age/grade levels.

> " I had a 2.3 GPA and am a first-generation college student. With barriers like these, it made it hard 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 am proudly working on CPI. "

— EMMANUEL JOHNSON,
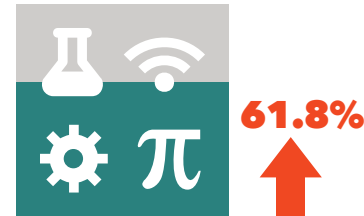**YWCA LEAD PLATFORM ARCHITECT, CPI™**

2016 - 2019

Student Reach

Launched in East San Jose School District
3,196 student reach

Outcomes

Interest in STEM careers increased by **61.8%**

Interest in working with computers increased by **↑50%**

Volunteers

684
total volunteer hours

PROGRAM EXPANSION

THE ROAD AHEAD

The **CPI™** Project is reversing the needle for underrepresented minorities and girls in their motivation, persistence, and preparation towards STEM+C careers. The project has grown and scaled significantly in a short period of time and is making strong progress forward.

CPI™ is driving growth, expansion and significant progress forward. Highlights include:

- Initiated discussions with **Mississippi State University** about a potential CPI expansion to the 12,000 students they serve in their college pipeline programs each year

- Increased our capability to serve up to grade 14 with a new contractual partnership with **Foothill College**, leading to the development of integrated dual enrollment programs in the upcoming year for high school CPI users

- Executed an MOU with **YWCA Houston** to expand to one middle school in fall 2019, with plans seeded to expand to a subsequent 5 schools within one year of launch

- Integrated summer week-long Cyber Camp programming from the **Bay Area Community College** Consortium into CPI, which is wrapping up this week and will support further expansion as we build out plans to reach more broadly across the bay area

RESEARCH PARTNERS

CPI™ is incubated and researched by:

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