MAY 2018

Systemic Investments in Equity, Talent, and Tech

Findings from a CECP Accelerate Community

BY DR. KAMAU BOBB

WITH PARTICIPATION FROM:

BEST BUY, BNY MELLON, CENTERPOINT ENERGY, COGNIZANT TECHNOLOGY SOLUTIONS, DEUTSCHE BANK, GENERAL ELECTRIC, HONEYWELL, INTEL, NORTHWESTERN MUTUAL, PSEG, PWC, TATA CONSULTANCY SERVICES, AND TRAVELERS

CECP

ABOUT CECP:
THE CEO FORCE FOR GOOD

CECP is a CEO-led coalition that believes that a company's social strategy—how it engages with key stakeholders including employees, communities, customers, and investors—determines company success. Founded in 1999 by actor and philanthropist Paul Newman and other business leaders to create a better world through business, CECP has grown to a movement of more than 200 of the world's largest companies that represent $6.2 trillion in revenue, $18.4 billion in societal investments, 4 million hours of employee engagement. CECP helps companies transform their social strategy by providing customized connections and networking, counsel and support, benchmarking and trends, and awareness building and recognition.

For more information, visit **cecp.co**.

Download additional copies of this report at **cecp.co/home/resources/**.

When referencing findings from this report, please list the source as: *Systemic Investments in Equity, Talent, and Tech: Findings from a CECP Accelerate Community*.

Contact us: +1 212.825.1000
or info@cecp.co

ABOUT THE AUTHOR

Dr. Kamau Bobb is a national authority on STEM education. The founding senior director of the Constellations Center for Equity in Computing at Georgia Tech, Dr. Bobb is an engineer and science and technology policy scholar whose work focuses on the relationship between equity for students and communities of color in STEM fields, large education systems, and the social and structural conditions that influence contemporary American life.

He brings to his current position a wealth of experience as a former program officer at the National Science Foundation (NSF). At NSF he was responsible for $30 million annually of investments focused on improving computing and STEM education. In that role Dr. Bobb worked at the highest levels of the federal government to help shape the national research agenda for effective means of delivering equitable and quality computational education to all students. He has worked with members of the Office and Science and Technology Policy in the Obama Administration to set the national strategy for STEM education at both post-secondary and secondary school levels. He was selected as a member of President Obama's 'My Brother's Keeper' STEM + Entrepreneurship Taskforce to help U.S. cities develop strategies to engage young men and boys of color in STEM activities and fields. Prior to his federal appointment, Dr. Bobb was the director of the STEM Initiative for the University System of Georgia, a collaborative effort with the governor's office to improve STEM education across the 30 public institutions serving approximately 325,000 students in the state. Dr. Bobb holds a Ph.D. in science and technology policy from Georgia Tech and M.S. and B.S. degrees in mechanical engineering from the University of California, Berkeley. He lives in Atlanta with his wife, Lisa, and daughter, Sadira.

Contents

Executive Summary 2

Context: the Accelerate Community on systemic investments in equity, talent and tech 3

Considering equity versus equality 4

Why investments in equity, talent, and tech? 5

What are tech workforce needs? 7

Education, equity, and equality 8

Why does segregation matter to the tech workforce? 10

Corporate engagement is on a spectrum 11

What is the spectrum? 12

The collective approach 15

Acknowledgements 16

Executive Summary

THE VIEWPOINT

This white paper is intended for those involved in corporate social engagement, as well as leaders in talent acquisition for companies with a tech workforce. STEM education has been one of the leading investment areas for CECP companies in recent years; this Accelerate Community and this white paper, stemming from insights from the CECP Accelerate Community, intends to examine the impact of those talent acquisition and STEM education programs in the context of structural inequity and to identify opportunities to bolster the effects of corporate investments by taking a more systemic approach.

VIEW FROM THE C-SUITE

The challenge of diversifying the tech workforce is confronting companies across sectors as more jobs are requiring digital fluency. Simultaneously, the demographics of the United States are changing rapidly and companies are challenged with ensuring that the talent pipeline reflects those shifts. Taking an equity approach toward investments in STEM benefits a business by both strengthening the impact of community efforts and also ensuring a dynamic talent pool.

THE OPPORTUNITY: ADVANCE THE MOVEMENT

CECP companies have an opportunity to be leaders in approaching investments in STEM education and tech talent pipelines using a systemic equity lens—leading the way for greater collaboration with other corporate and cross-sector partners and for sustainable systems-level change.

THE OPPORTUNITY: ADVANCE YOUR COMPANY

Taking an intentional approach, companies can find opportunities to align their tech talent pipeline efforts and STEM community engagement programs. By tying exposure programs to formal learning and exploring alternative recruiting strategies and pipelines, companies can increase the impact of their STEM programs and make progress toward building a sustainable tech talent pipeline.

THE STUDY

During the past year, companies participating in CECP's Accelerate Community in Systemic Investments in Equity, Talent, and Tech have met every quarter for in-person day-long meetings and participated in office hours calls with CECP and Dr. Kamau Bobb. These companies have authentically engaged in conversation around the challenges of and opportunities presented by their programs, with the intention of increasing their impacts for the benefit of their communities and their companies.

Context: the Accelerate Community on systemic investments in equity, talent and tech

Developing a robust and diverse technical workforce in the United States is a national priority. U.S. corporations are clamoring to find innovative ways to assist the education system in ensuring that American graduates at all levels are prepared to enter the technical workforce. At the same time, the demographics of the country are changing at unprecedented rates and the social pressure for diversity and inclusion is strong. Both of these changes are happening while the country is experiencing race and class segregation at the highest levels in decades. The challenge of diversifying the tech workforce is not taking place in a vacuum.

Real progress can only be made through honest assessment of the context in which this effort is occurring. Now, when industry needs, the social fabric, and the political attitude of the country are all in flux, the effort to diversify the tech workforce is even more important. Increasingly, the tech workforce is becoming *the* workforce. The extent to which people develop some degree of tech skills will determine how significantly they are able to participate in modern American life. This is the heart of the matter. Achieving equity is the challenge. This is the reality that the community of CECP companies and the nation must confront when considering equity, talent, and tech. This effort has three basic pillars:

- Individual firms must meet their specific workforce needs to achieve industry-specific competitive advantages, while,
- The nation needs a highly skilled representative workforce if U.S. institutions are to maintain global leadership in innovation and technology in the modern knowledge economy, and,
- Diversifying the workforce at all levels is required given changing U.S. demographics.

For nearly two decades, CECP has been focusing on some of the most pressing issues at the intersection of corporate needs and the nation's urgent social challenges. Right now, the development of a robust and sustainable technical workforce is a critical issue. Indeed, CECP research shows that STEM and workforce/employment are the fastest growing focus areas for companies' social strategies. Between 2014 and 2016, the number of companies noting STEM as a priority focus area rose by 6.7%. The number of companies that mentioned workforce/employment as a focus area also rose by 6.7%.[1]

This CECP Accelerate Community is a dedicated peer group of companies focusing collectively on the issue of systemic investments in equity, talent, and tech. CECP-affiliated companies have recognized the national need to bolster their tech talent pipelines and diversify the tech workforce. Despite considerable attention, public scrutiny, and significant provision of resources, the feeling is that the "needle" is not shifting quickly enough. Progress toward racial and ethnic diversity has been slow, especially in the upper levels of the most publicly visible tech companies. Companies across sectors continue to struggle to fill their current and future skilled tech positions. Corporate social investment and programmatic engagement have been significant over the last decade, but—several years on, many are questioning the impact of those programs and are seeking to take them to the next level.

CECP commends the dedication of the companies in the Accelerate Community, which include:

- Best Buy
- BNY Mellon
- CenterPoint Energy
- Cognizant Technology Solutions
- Deutsche Bank
- General Electric
- Honeywell
- Intel
- Northwestern Mutual
- PSEG
- PwC
- Tata Consultancy Services
- Travelers

Over the past year, the 13-company Community has been taking stock of the context of this effort to change the face of the tech workforce. Attempting to create demonstrable change in the tech workforce and to meaningfully engage communities requires a fresh look at equity: What do we mean by the term? The task of the Accelerate Community was to revisit what an equity framework might look like in this changing environment. The objective: Focus deeply and honestly on the structural parameters that enable equitable outcomes in diversifying the tech workforce.

1 CECP and the Conference Board (2017). *Giving in Numbers: 2017 Edition*. Available at: http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf

Considering equity versus equality

EQUITY AND EQUALITY ARE NOT THE SAME.

EQUITY is fairness, justice, and the absence of bias. In this context, it manifests in structures. When schools, colleges and universities, and corporations are equitable, they are fair. When equity is present, people's experiences are not determined by their race, ethnicity, or gender.

EQUALITY is the equal distribution of an item or experience across a set of units—corporations, classrooms, or communities. In this context, it manifests in programs. Providing all students exposure to an informal STEM experience gives equal access, but they may attend inequitable schools.

Equity is more fundamental than equality. It is possible to have equal distribution of something and still have unequal outcomes because of inequity. Having a computer science class, for example, in every high school is the equal distribution of a course. If the schools themselves are not equally resourced and capable, the learning outcomes will not be equal. The course has been equally distributed, but the education system itself is inequitable.

Equal opportunity employment gives everyone a fair chance at employment—but does not address the implicit bias that, once a person is hired, impedes access to leadership programs or delays promotion. This distinction between equity and equality is the basic framing that CECP's Community used to approach systemic investments in equity, talent, and tech.

For investments in STEM experiences and talent acquisition, this translates into a more holistic approach and an appreciation of the difference between focusing on programs versus focusing on structures. Over the course of Community meetings, consensus was reached on the core tenets of equity:

- **EXPOSURE.** Corporate engagement programs that interface with students in informal after-school spaces ought to be more directly linked to their formal learning. Expanding exposure to extracurricular STEM experiences can achieve equality of opportunity. If, however, students' formal education is subpar, they still encounter a structural barrier to moving into post-secondary STEM education.
- **VALUE.** Talented students and recruits attend schools across the spectrum. Recruitment strategies must resist the tendency to focus on the alma maters of current employees and the most selective schools.
- **EXPECTATIONS.** Talent acquisition programs geared toward recruiting talent from diverse communities cannot be stigmatized. In recruitment from universities, for example, the segregation of schools must be decoupled from assumptions about the skills of graduates of majority Hispanic or Black institutions. Predetermined belief systems about potential employees' abilities is a structural barrier to their hiring and success.

Inequity is the substance of inequality and the evidence of injustice.

Tenets of an equity framework:

- Tie exposure programs to formal education outcomes
- Resist assigning value propositions to different kinds of schools
- Ensure the culture values and has high expectations of all talent acquisition programs.

Why investments in equity, talent, and tech?

Racial and ethnic identity correlates with education and professional success in America. That is evidence of structural inequity[2] and injustice. For the corporate community to have a skilled technical workforce reflective of the future population of the country, it will have to intentionally help break that correlation and undo the pattern. Ever-growing industrial workforce needs and a dramatically changing population are at the vanguard of one of the most significant social challenges of our time. Systemic investments in equity, talent, and tech must be the corporate response to this challenge.

The shift in the U.S. population is historic and its significance cannot be overstated. By approximately 2040,[3] the majority of the population of the United States will not be White. This will be the first time since the founding of an independent United States that White people will be in the minority. People of color—Asian, Black, and Hispanic people—will make up more than half of the total population and nearly 60% of children under 18 years of age.

This basic fact provides the parameters of the issue of equity, talent, and tech. The U.S. technical workforce of the future will not look like it does now. Regardless of the motivation behind diversity and inclusion as a business goal or equity as a collective aim, the current status will not hold. While the social and political tensions caused by this reality are complex, this shift has already begun[4] and is moving forward. The challenge facing U.S. corporations is to help build a tech workforce that is reflective of the future population. This challenge is not new, but it is coming into sharp focus as this historic inflection point in the U.S. draws near.

NON-HISPANIC WHITES MAY NO LONGER COMPRISE OVER 50% OF THE U.S. POPULATION BY 2014

Percent minority by Age Group: 2014 to 2060

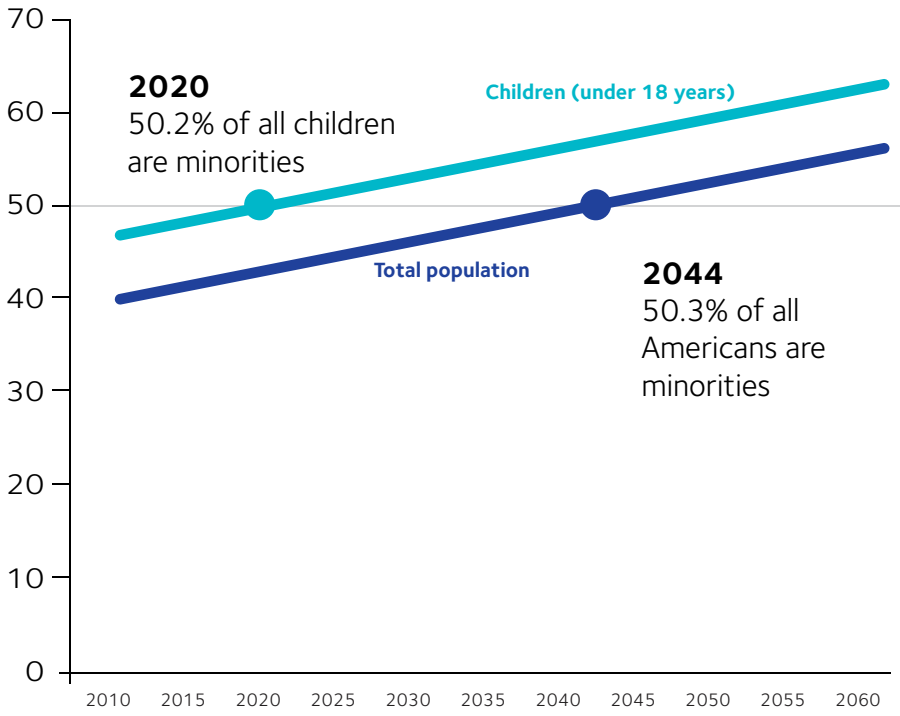


Figure 1 US Population Projections. Census Bureau 2015.

For U.S. corporations, continuing to rely on predominantly White and Asian males is untenable. There simply will not be enough of them. In addition, the social pressure for diversity in such a critical sector of American life is only likely to increase as the ethnic diversity of the country continues to increase.

2 Binelli, M. (2017). "Michigan Gambled on Charter Schools. Its Children Lost." New York Times Magazine. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf**

3 U.S. Census Bureau (2015). "New Census Bureau Report Analyzes U.S. Population Projections." Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

4 Lopez, M.H. (2014). "In 2014, Latinos will surpass whites as largest racial/ethnic group in California." Pew Research Group. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

There are options, however. Seeking talent from overseas and increasing the global footprint of U.S.-based companies are options. Another option: Keep increasing the pressure to raise the cap on H-1B visas for foreign nationals to ameliorate the shortage of specifically trained U.S. tech workers. Still another is shifting the technical center of gravity abroad. All of these can take place while leaving the diversity problem of the U.S. tech workforce unsolved. Under the cover of globalism, the tech sector of large U.S. corporations can, in fact, remain predominantly White and Asian and male. The danger, of course, is that keeping the status quo could contribute to the permanent marginalization of people of color in the U.S. tech sector.

When American children born in 2019 turn 21, they will be the first in the nation's history to enter the workforce when the majority the country will be people of color.

What are tech workforce needs?

In 2012, the President's Council of Advisors on Science and Technology (PCAST) issued a report, *Engage to Excel*.[5] The report suggested that for the U.S. to maintain "historical preeminence in science and technology," the country must produce approximately one million more professionals with STEM degrees over the course of the ensuing decade. To meet this goal, the U.S. would need to increase the number of students earning undergraduate STEM degrees by about 34% annually over 2012 rates.

The report emphasizes a workforce with undergraduate degrees in STEM fields, but the needs are actually greater. Across all industrial sectors, the modern worker needs some level of technical or digital skills to function effectively. So, the field expands to include individuals who are not specifically pursuing degrees in engineering or computing but do need basic post-secondary STEM skills of some kind. The "digitalization of the workforce" is a phenomenon basic to the larger challenge confronting companies across all sectors. It helps define the spectrum of the tech workforce. On one hand there are highly specialized technical skills that require specific post-secondary STEM degrees. On the other, basic facility with digital tools is needed to accomplish particular job tasks.

According to a Brookings Institute report, *Digitalization and the American Workforce*,[6] the proportion of jobs requiring digital skills is continually increasing, but highly skilled and less technically skilled jobs are growing at different rates. Jobs requiring advanced digital skills increased 18% between 2002 and 2016, while jobs requiring average digital skills increased only 8%. Jobs requiring low digital skills decreased from 56% to 30% over the same period. That basic shift offers one description of the obvious change in the American economy: High-level digital skills are more valuable, and the need for more rigorous and technical education is increasing.

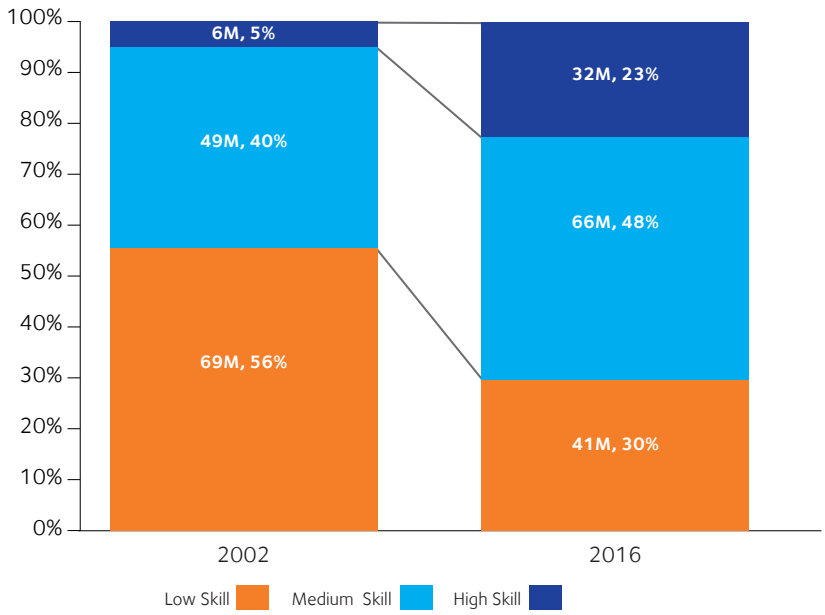
Economic projections point to a need for approximately 1 million more STEM professionals than the U.S. will produce at the current rate over the next decade if the country is to retain its historical preeminence in science and technology.

The challenge facing the CECP Community and the nation is to make sure that people of color and poor people of all kinds are not disproportionately concentrated in low-skill jobs and placed on the education pathways that lead to them. Companies need to have a robust talent pipeline to fill positions at all levels with no stratification by race and class.

5 President's Council of Advisors on Science and Technology (2014). "Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics." Executive Office of the President. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

6 Muro, M., Liu, S., Whitan, J., and Kulkami, S. (2017). "Digitalization and the American workforce." Brookings. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

EMPLOYMENT BY LEVELS OF JOB DIGITALIZATION
2012 and 2016



Source: Brookings analysis of O*NET and OES data

Figure 2 Brookings Institute Report. Digitalization and the American Workforce, 2017.

Education, equity, and equality

Education pathways are a structural matter. How much the tech workforce can be diversified is dependent, *in part*, on the development of an equitable education infrastructure. The tech workforce is primarily drawn from selective colleges and universities. It warrants repeating that U.S. colleges and universities do not serve the American public equally.

According to a 2013 report by the Center for Education and the Workforce at Georgetown University, *Separate and Unequal*,[7] U.S. colleges and universities are critical institutional structures that highlight the challenges within the tech workforce.

Between 1995 and 2009, the number of U.S. high school graduates attending colleges and universities increased significantly. Hispanic students increased by 107%. Black students increased 73%, and White students, 15%. The increase in U.S. students pursuing higher education is a positive indicator for the future of the country. It expands the pool of potential employees capable of meeting national workforce needs. It also creates a more educated American citizenry.

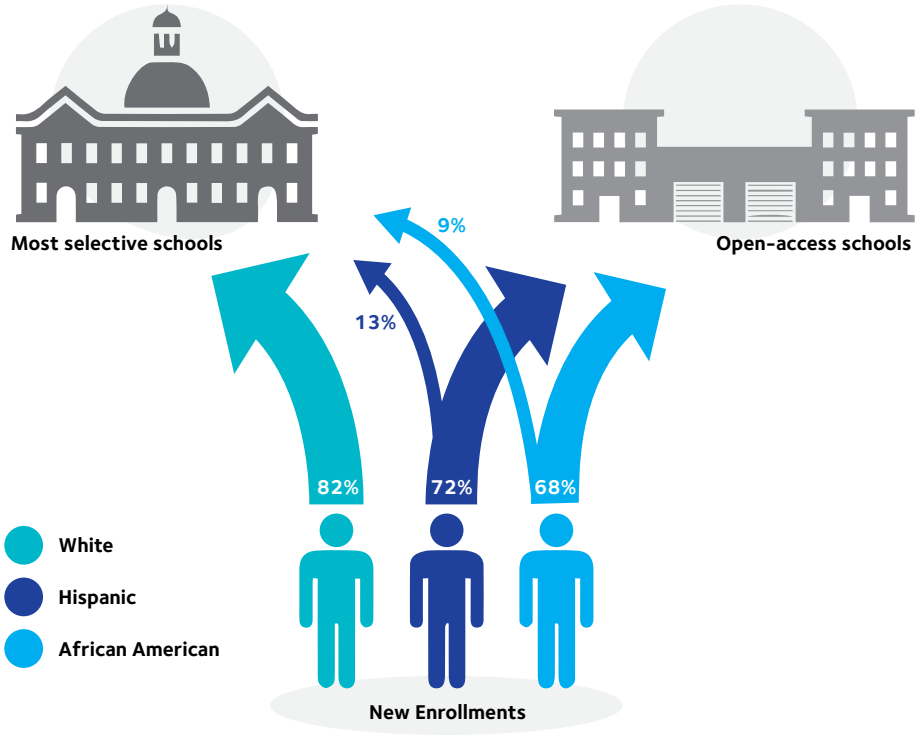


Figure 3 Center for Education and the Workforce Report, *Separate and Unequal.* 1995 - 2009

Eighty-two percent of all the new White college students between 1995 and 2009 went to highly selective institutions. Over that same period, only 9% of new Black and 13% of new Hispanic students enrolled in highly selective institutions. At open-access two- and four-year institutions, 72% of the growth in enrollment was attributable to Hispanic students and 68% to Black students. No growth occurred in the proportion of White students attending less-selective institutions.

This matters for equity in the tech workforce because U.S. firms, especially those that require employees to have significant technical expertise, largely recruit only from the 468 highly selective American colleges and universities. At the elite ranks of the tech industry, selectivity becomes even more acute. High-tech companies often recruit only from the country's top university programs that specialize in the specific area of their technical interests. The representation of students of color at these most-elite colleges and universities remains an unsolved problem.[8] Outside of the

The post-secondary system mimics the racial inequality it inherits from the K-12 education system, then magnifies and projects that inequality into the labor market and society at large.

The issue is that the distribution of students is correlated with race. Out of the 4,400 higher education institutions, 468 are highly selective.

7 Carnevale, A.P., and Strohl, J. (2013). "Separate and Unequal." Georgetown University Center on Education and the Workforce. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

8 Askenas, J., Park, H., and Pearce, Adam (2017). "Even with Affirmative Action, Blacks and Hispanics Are More Underrepresented Than 35 Years Ago." New York Times. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

elite programs, the channeling of White students to highly selective institutions and students of color to open access institutions underscores the challenge.

The education landscape reflects a degree of racial[9] and economic[10] segregation in the United States; such segregation is the proverbial elephant sitting in the room during every discussion of diversity and inclusion in the tech workforce. According to the *Separate and Unequal* Georgetown report cited earlier, "The post-secondary system mimics the racial inequality it inherits from the K-12 education system, then magnifies and projects that inequality into the labor market." If corporate social investment and programmatic engagement in this space are to achieve meaningful impact, they must directly contend with this fact.

This degree of racial segregation in the nation's schools correlates with a range of educational outcomes, social and economic trends, housing patterns, and nearly every indicator of civic life. It is at the center of the equity challenge.

Segregation, not diversity and inclusion, is the common thread that links primary and secondary education to higher education in the United States. The charge to diversify the tech workforce is taking place at the end of an education system where segregation is present at every stage.

While physical segregation by race and class is real, the belief system associated with it is equally dangerous. "Inclusion" is based on culture and belief systems. "Diversity" is based on the distribution of people. What we heard from many participants in the Accelerate Community is that while the programs associated with STEM engagement and outreach are well-intentioned, there can be an internal climate, or culture, that lacks confidence in the merit of these efforts and individuals who enter the company through them. In some cases, precisely because programs are targeted to students or potential talent of color, the unspoken belief is that the beneficiaries of those programs are not as qualified. The programs are designed to address diversity through providing equal opportunity for access. Inclusion becomes a challenge because this belief system undermines fairness.

This is an age-old challenge. The 1954 Supreme Court case *Brown v. Board of Education* is oddly relevant to this work. Chief Justice Warren's language in voicing the opinion of the Court points specifically to the distinction between equity and equality.

DEMOGRAPHICS OF SCHOOL ATTENDANCE ZONES

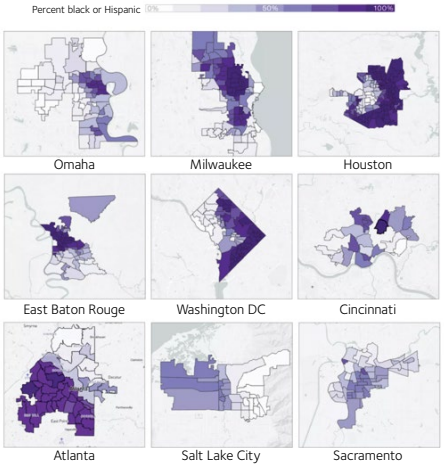


Figure 4 The data proves that school segregation is getting worse. Vox. March 5, 2018

"[D]oes segregation of children in public schools solely on the basis of race, even though physical facilities and other "tangible" factors may be equal, deprive the children of the minority group of equal education opportunities? We believe that it does. ..."

"Segregation of white and colored children in public schools has a detrimental effect upon the colored children. The effect is greater when it has the sanction of the law, for the policy of separating the races is usually interpreted as denoting the inferiority of the negro group. A sense of inferiority affects the motivation of a child to learn. Segregation with the sanction of law, therefore has a tendency to [retard] the educational and mental development of negro children and to deprive them of some of the benefits they would receive in a racially integrated school system."

— Chief Justice Earl Warren, 1954

9 Chang, A. (2017). "The data proves that school segregation is getting worse." Vox. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

10 New York Times. "Some Colleges Have More Students From the Top 1 Percent Than From the Bottom 60. Find Yours." Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

Why does segregation matter to the tech workforce?

Corporate engagement in STEM education, diversity efforts, and talent acquisition are happening within today's particular social context. Determining the specific social factors that affect students' education, and thereby career trajectory, is an important variable in settling on the design and objective of corporate engagement.

The companies of the Accelerate Community represent a wide range of interests and programs of the broader CECP coalition. All are facing similar challenges associated with the outcomes of STEM education initiatives and the onboarding and retention of people of color. Confronting the social and educational realities directly need not lead to paralysis; rather it may readily lead to a more honest assessment of the parameters of the problem. All of the participating companies are engaged in programs that in some way are trying to catalyze place-based transformation. When dealing in the K-12 space, they are looking to affect students' interest in STEM fields. When engaging with higher education, they are aiming to transform the environment to foster success among a greater range of students.

This approach lends itself to engaging directly in the structures that affect equity in these efforts. Whether efforts are directed at local city transformation or external education partners, these efforts raise very important questions that help frame the business case for investments in equity and tech. Specifically, companies must confront the following:

- How can companies effectively integrate broader place-based objectives into the specific internal business case for philanthropic and program investments?
- In local municipal efforts, how can individual companies weigh the real equity challenges that must be addressed in a city against the projection of hope and promise for the new workforce that they need?
- What impact can corporate engagement have in changing students' educational and career trajectories?

Corporate engagement is on a spectrum

Framed by these questions, corporations are engaging in the equity, talent, and tech effort on a spectrum. Members of the community affirmed that the two driving principles behind this effort create an ever-present tension between: *self-interest to develop their talent pipeline* and *social responsibility to support the community*. These two ideals, both important, serve as bookends for the spectrum of engagement. Companies are motivated by self-interest: They need to recruit and retain talent to meet their specific mission-critical objectives. In certain sectors of the tech workforce, the need for talent is urgent.[11]

On the other end of the spectrum, companies are engaged in activities to promote social responsibility. Much of the programmatic investment is in the informal learning that happens parallel to students' formal schooling. These often help fulfill social responsibility requirements and are a long-term investment in a more diverse workforce. This basic framing of corporate engagement in equity, talent, and tech results in a bi-modal spectrum of effort.

Often, these efforts are being driven in silos by the corporate social engagement department, human resources, or talent departments. The companies participating in CECP's Accelerate Community identified the opportunity to more closely align and collaborate across functions for greater sustainability and impact of efforts.

SPECTRUM OF CORPORATE ENGAGEMENT

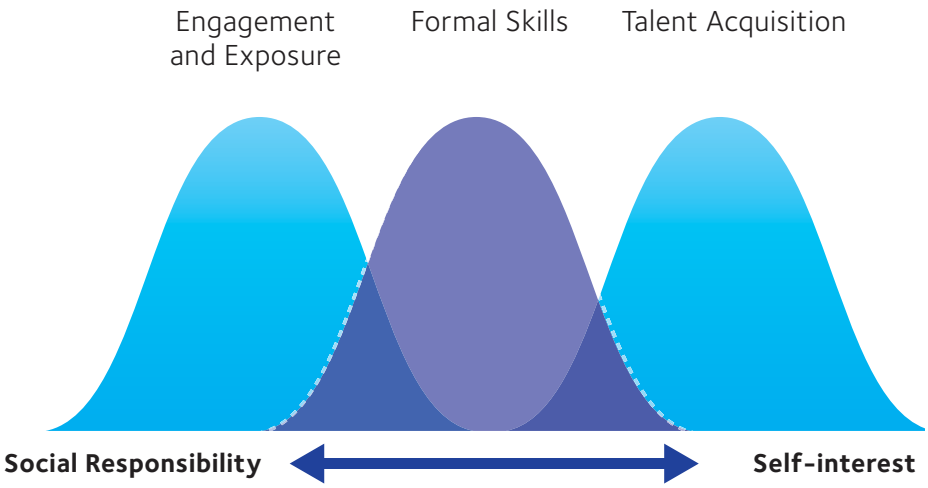


Figure 5 Equal skills are acquired in equitable institutions

11 Metz, C. (2018). "A.I. Researchers Are Making More Than $1 Million, Even at a Nonprofit." New York Times. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

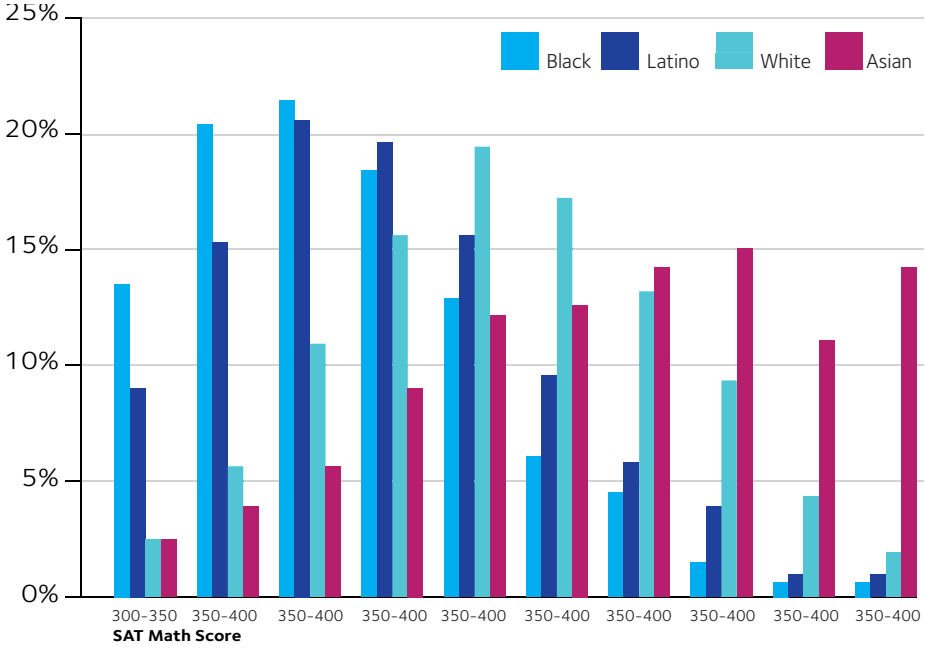
What is the spectrum?

STAGE 1 | ENGAGEMENT AND EXPOSURE

At one end of the spectrum is an array of programs focused on K-12 engagement and exposure. Several corporations have signature programs that offer engagement with STEM activities to youth of color and/or young women and girls, both underrepresented demographics in STEM fields. These programs are often informal experiential activities—robotics, hackathons, and other STEM activities of some kind. These programs' broad objective is to pique student interest and thus increase the likelihood that young people will pursue STEM fields in college. These programs also serve as important indicators of good corporate citizenship. The branding of these programs is necessary to signal to the community that individual companies are aware, concerned, and engaged in helping those populations most in need.

Seen through an equity lens, K-12 engagement and exposure to STEM experiences are necessary, but insufficient, to change the trajectory of students' academic outcomes. The reality that these programs are up against is rooted in deeply entrenched educational patterns that reveal structural inequities. For example, exposure to STEM activities alone will not affect students' performance on the SAT or ACT, which most selective colleges and universities in the U.S. require during the application process. Notwithstanding the limited utility of the SAT,[12] the racial divide on that exam remains a leading indicator not only of the nation's segregated college landscape, but the challenge to diversity and inclusion that all U.S.-based corporations face.

RACE GAPS IN MATH SAT SCORES



Source: College Board, SAT percentile ranks for 2015 college-bound seniors

Figure 6 Brookings Study on Race Gaps on the SAT

While corporations cannot fix education, if they are to engage in improving education, they are responsible to do so in a manner that directly connects to the core educational outcomes that determine students' trajectories in STEM fields. Tying engagement and outreach programs to formal learning outcomes that correlate with student progress anchors the efforts in equity.

STAGE 2 | RIGOROUS PROGRAMS

Stage two is the space between the two modes. This is the most promising innovative opportunity.

In the K-12 space, rigorous programs are those that tie informal exposure to formal educational outcomes. The distinction between a program focused on equity and another focused on equality is important. An effort driven by equality leads to measures of program effectiveness that rely on the number of students having a specific experience. The number of students who participate in a corporate-sponsored hackathon, for example, may number in the thousands and meet objectives related to student touch. An effort driven by equity would also sponsor the complementary offering of any of the suite of formal STEM courses necessary for students to realistically move into post-secondary STEM education. The former focuses solely on student participation, the latter on building an equitable infrastructure to substantively change participants' educational outcomes.

12 Zinshteyn, M. (2015). "What We're Missing in Measuring Who's Ready for College." FiveThirtyEight. Available at: **https://fivethirtyeight.com/features/what-were-missing-in-measuring-whos-ready-for-college**

ALGEBRA	BEGINNING	DEVELOPING	PROFICIENT	DISTINGUISHED
BLACK	60	29	10	1
HISPANIC	52	32	13	3
WHITE	9	24	35	33

Figure 7 Algebra | End of Course Test. Atlanta Public Schools, 2017

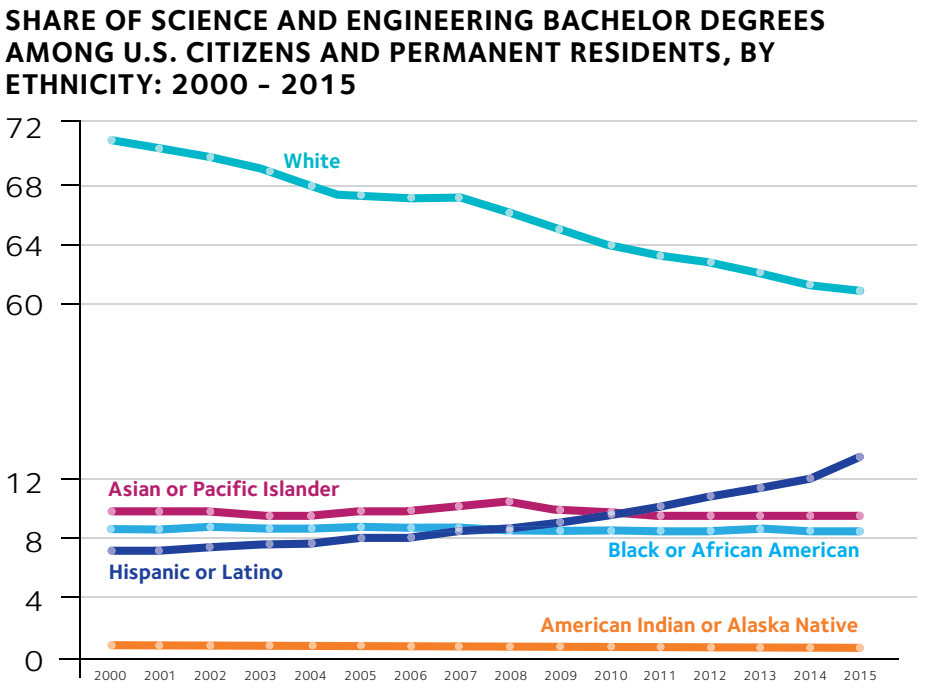


Figure 8 National Science Foundation Report on Minority Participation in Engineering Fields, 2017

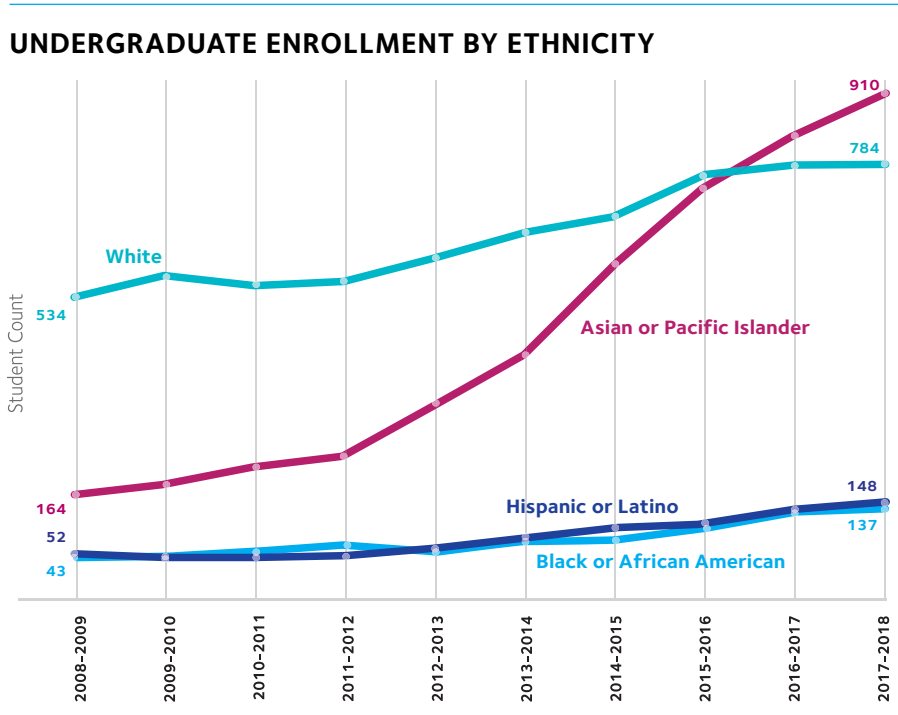


Figure 9 Georgia Tech Undergraduate Enrollment in the College of Computing

In K-12 partnerships, the space between the two nodes is arguably the more difficult section of the spectrum for successful corporate engagement, but it is likely the most effective. It requires innovative ways to develop long-term partnerships and collaborations with public school districts and individual school leaders. Although none of that is easy, it is as essential as it is difficult. Choosing the points on this section of the spectrum to engage requires an assessment of the critical junctures in students' school careers. Critical junctures are the specific educational experiences that have a disproportionate effect on students' trajectories. Using innovative partnerships to improve student performance in algebra, for example, can have considerable influence on student movements into post-secondary STEM courses and, ultimately, into the STEM workforce.

Algebra is arguably one of the most pivotal courses in students' path toward a future in STEM fields. Calculus is a significant factor in admission to selective institutions of higher education and is a structural component of student success. In Atlanta Public Schools, for example, success in 9th grade Algebra I remains correlated with race. It is a critical structural barrier. While students' interests in STEM fields may be piqued through a rich corporate-sponsored experience, success in algebra carries much more weight in determining their future.

STAGE 3 | TALENT ACQUISITION

One of the common explanations for the disproportionately low fraction of people of color—specifically Black and Hispanic people—in the tech workforce is that not enough of them are earning undergraduate degrees in STEM fields.

The proportion of students of color earning undergraduate degrees in STEM fields has remained relatively

stable over the last twenty years. The only significant increase has been among Hispanic degree earners since 2011. While these are percentages, the absolute number has increased steadily. Ironically, White students are the only group wherein the proportion earning undergraduate degrees in STEM fields has declined— from 70% in 2000 to approximately 60% in 2015 (*see Figure 8*).

In certain critical areas like computer science, White students at some institutions are no longer the majority. In 2016, for the first time, there were more Asian undergraduate students in Georgia Tech's College of Computing than there were White students. It is a trend unlikely to reverse, suggesting that the challenge of talent acquisition and university enrollment in STEM fields may soon not be limited to people of color, but to White Americans, too.

Recruitment, retention, and promotion remain the core challenges facing Black and Hispanic candidates for tech-related roles. Companies' recruitment strategies and internal policy structures are at the core of this effort. There is no shortage of innovative[13] practices in this regard—to recruit from alternative[14] pipelines. It is the high mark of one end of the bi-modal spectrum. The recently elevated status of chief diversity officers and an entire industry surrounding diversity and inclusion are evidence of the effort.

13 Sueing, H. (2018). "Howard West program expands, opening up opportunity for future engineers." The Keyword. Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

14 United Negro College Fund (2017). "UNCF HBCU Innovation Summit Opens Silicon Valley Doors to Talented Students." Available at: **http://cecp.co/wp-content/uploads/2017/10/Giving-in-Numbers-2017.pdf?redirect=no**

The collective approach

The challenge of achieving equity in the tech sector is complex and is interconnected with social challenges embedded deeply in American society. Solving the problem, therefore, cannot be achieved by any individual entity alone. For CECP-affiliated companies and for U.S. firms that are interested in addressing this problem, a collective approach is the only way forward. Social change frameworks like collective impact[15] and network improvement[16] communities are methods based on the premise that only through partnership can a diverse and sustainable tech workforce be achieved.

The experience of the Accelerate Community to date has highlighted the extent of the challenges that members of the Community and the broader tech sector are facing. Being direct about the nature of the problem is critical. Being clear about which problem corporate giving and engagement is designed to solve is equally important. Despite the length of time that companies have been engaged in this effort, now is the appropriate moment to pause and take stock of the current reality. In the process, the distinction between equity and equality is emerging as an important guiding principle for engagement in this space. The Community has provided a platform for rethinking the opportunities to improve existing efforts in the context of an equity framework.

The Community agreed that while no silver bullet exists for this complicated American problem, an approach centered on equity yields actionable next steps:

- Clearly identify **where on the spectrum** the company's engagement efforts are located. Be intentional about where they are positioned. This determines the appropriate measures of success.
- Be clear about the **identification of the problem** the engagement effort is designed to solve.
- The **internal business case** for this work must be interwoven into a broader context. Understand the ecosystem in which engagement and exposure programs take place.
- **Align corporate responsibility and talent acquisition** within companies to balance the short- and long-term needs.
- **Partner with organizations** involved with specific aspects of the landscape that are beyond the scope and expertise of company programs. Nonprofit organizations that serve at the interface of formal and informal learning are critical. Higher education institutions are essential partners for innovation in talent acquisition. Therefore, making those connections can in and of itself be a measure of impact.
- Be clear that **equal opportunities are only meaningful when they reside in equitable institutions**.

In the end, this is a long-term commitment. The confluence of social, demographic, and technical challenges in the country and its companies are unique to the 21st century. Only through a collective approach can we arrive at an equitable solution.

15 Kramer, M., and Kania, J. (2011). "Collective Impact." FSG. Available at: **https://www.fsg.org/publications/collective-impact**

16 McKay, S. (2017). "Five Essential Building Blocks for a Successful Networked Improvement Community." Carnegie Foundation for the Advancement of Teaching. Available at: **https://www.fsg.org/publications/collective-impact**

Acknowledgements

CECP thanks the 13 Accelerate Community companies who authentically engaged with this topic, addressing difficult questions and sharing candidly the challenges and opportunities of taking a systemic approach to investments in equity, talent, and tech:

- Best Buy
- BNY Mellon
- CenterPoint Energy
- Cognizant Technology Solutions
- Deutsche Bank
- General Electric
- Honeywell
- Intel
- Northwestern Mutual
- PSEG
- PwC
- Tata Consultancy Services
- Travelers

We are grateful for the expertise of Dr. Kamau Bobb in leading this Community, drawing from his vast expertise of the STEM education landscape. CECP would also like to thank the following individuals for their role in contributing to and shaping the Accelerate Community: Barb Short, Chief Diversity Officer, President, PSEG Foundation and Senior Director, PSEG Corporate Citizenship and Culture; Ron Ottinger, Director, STEM Next; and Tessie Topol, Principal, Topol Consulting. The CECP team that supported this Community includes: Courtney Murphy, Director, Strategic Partnerships; Jennifer Weston-Murphy, Associate Manager, Corporate Leadership; Jackie Albano, Associate Director, External Affairs; and Daniel Vitaletti, Associate, Corporate Leadership. We look forward to bringing this conversation forward and advancing the practices of companies in addressing systemic inequity, supporting communities, and building a diverse tech talent pipeline.

ABOUT CECP: THE CEO FORCE FOR GOOD

CECP is a CEO-led coalition that believes that a company's social strategy—how it engages with key stakeholders including employees, communities, investors, and customers—determines company success.

CECP 85 Broad Street, 27th Floor
New York, NY 10004

+1 212.825.1000

cecp.co

85 Broad Street, 27th Floor
New York, NY 10004
P: +1 212.825.1000
@CECPTweets

cecp.co