

# Moving Education Forward:

Strengthening STEM in  
Today's Classrooms

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# Moving Education Forward:

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## A Message From ITI President and CEO Dean C. Garfield

From sliced bread to the semiconductor, innovation has always been an integral piece of America's DNA. The tech sector is building on that legacy of leadership to make science, technology, engineering, and math (STEM) education a greater priority for our students to ensure the future prosperity of this nation.

To bolster innovation in schools, America's information and communications technology leaders make major commitments of financial resources, classroom technologies, personal mentoring, and cutting-edge thinking to help develop new opportunities for STEM learning. We are determined to help schools, states, and districts advance their capabilities, and in turn, build students' dynamic 21st century skills.

We are engaged because today, too many American workers do not have those in-demand skills. Our workforce has fallen behind our global competitors, and, without stronger intervention by our public sector as well as our business leadership, today's students are at risk of falling further behind.

The global competition is fierce. Our major economic rivals are investing heavily in STEM education. In 2007, China for the first time surpassed the United States in STEM graduates. During the past seven years, India has tripled its output of four-year STEM degrees. In Japan, more than six in ten college degrees are in STEM fields, while not even two in ten are STEM degrees here in the United States.

We must compete with these nations for talent and jobs, and it starts in our classrooms. We know what works. Students excel when they have the opportunity to learn and apply advanced STEM knowledge and skills through hands-on instruction and experiences, complemented by an innovative curriculum, and real-world role models. Classrooms, from pre-K through college, must continue to spark creativity and critical thinking skills, and ultimately arm our students with the skills they will need in tomorrow's workplaces.

Each missed opportunity to invest in our workforce is a missed opportunity to spur innovation, unleash the transformative power of new and emerging technologies, and grow the economy.

This is why the tech sector is partnering with entities like the Information Technology & Innovation Foundation, Change the Equation, and the [e](#) that are also committed to better preparing our students for the challenges they will face in the global marketplace.

I invite you to learn more about ITI members' ongoing STEM education and workforce training initiatives and to share your ideas and feedback on how we can build upon these efforts. Just as important, I encourage you to engage with our young people so we remain a nation of bold thinkers who lead in global innovation.

Sincerely,



Dean C. Garfield  
ITI President and CEO





## Facing STEM Challenges

Linda Rosen

CEO, Change the Equation

In late 2010, about 100 corporate CEOs joined forces to form Change the Equation, a nonprofit coalition dedicated to improving U.S. students' performance in science, technology, engineering, and mathematics (STEM). Together, they recognized the moral and economic urgency of action.



Change the Equation members realize that change is possible. In fact, evidence shows that years of hard work by schools, communities, and businesses are paying off: U.S. students have steadily improved their performance in the past two decades. In 1990, for example, more than half of fourth-graders scored below "Basic" on the math portion of the National Assessment of Educational Progress. Today, fewer than one in five do.

Yet, our members agree that the U.S. isn't gaining fast enough, and must redouble their efforts. In one recent test, U.S. high schoolers did significantly worse than their peers in 17 other countries in math and 12 other countries in science. Children of color, who will soon be the majority of U.S. K-12 students lag farthest behind. The U.S. ranks behind 26 other countries in the share of college students who earn undergraduate degrees in science or engineering.

These shortcomings present a major threat to the nation's future prosperity. Too often, business leaders struggle to find employees with the STEM knowledge and skills needed to retain their innovative edge.

People with STEM skills are in an enviable position. Our research shows that, even during a time of high overall unemployment, there were almost two job openings in STEM for every unemployed person with STEM skills.

Sadly, such opportunities will not be available to the millions of young people who lack STEM knowledge and skills. Too many U.S. students—and particularly low-income students and students of color—lack access to challenging math and science classes, fully qualified math and science teachers, and critical educational supplies and equipment. These inequities are a stark reminder that we as a nation have yet to deliver on our founding ideal of equal opportunity. Broad access to STEM skills is a moral and economic imperative.

Change the Equation confronts this challenge head on. We advocate for better STEM learning opportunities at the state level, using research from our Vital Signs reports on the condition of STEM learning in all 50 states and the District of Columbia. Members also are adopting our STEMworks database of effective STEM learning programs to ensure that their philanthropic support of STEM learning initiatives has the greatest possible impact. Change the Equation members also have helped create a new suite of on-line career exploration games, iONFuture.org, to get middle schoolers excited about the vast array of STEM jobs.

U.S. businesses understand that we are allowing far too much talent to go untapped. At a time when so many of our biggest economic, environmental, and social challenges are at heart STEM challenges, we need all hands on deck.



## STEM: A Key to Innovation

Rob Atkinson

President, Information Technology and Innovation Foundation

Science and technology-based innovation drives long-term economic growth, competitiveness, and quality-of-life improvements. Succeeding in this area is impossible without a workforce educated in science, technology, engineering, and math (STEM).



As a result, it behooves the United States to support strong STEM education, especially as our competitors recognize the links between STEM education, greater research, and increased innovation. As the Organisation for Economic Co-operation and Development (OECD) observes, “Education systems play a broad role in supporting innovation because knowledge-based societies rely on a highly-qualified and flexible labor-force in all sectors of the economy and society. Innovation requires the capacity to learn continually and upgrade skills.”

Some have argued we do not need to focus on STEM education in our post-modern economy. With a number of companies moving R&D and technical jobs offshore, we don't need as many STEM jobs, or we can always rely on immigrants with STEM degrees. But these claims ignore three key facts:

- First, the number of STEM jobs in the U.S. is actually projected to grow not shrink over the next decade, and at a faster rate than other jobs.
- Second, we may not be able to rely on high-skill foreign STEM talent too much longer, as nations like China and India successfully improve their technology economies and universities.
- Finally, if the United States is ever to turn its economy around, including eliminating the massive trade deficit, we will have to do it largely through science and technology-based industries, which will require large numbers of additional STEM workers. Just as we would be unable to expand our industry if we lacked the natural resource materials to build the factories or energy to power the plants, we cannot expand our technology economy without the needed human resources, in this case high-quality STEM graduates.

As other nations make the investments needed to grow their innovation economies, the United States is rapidly losing ground. To address this we must focus on creating a robust pipeline of STEM workers who can drive our high tech economy and become the innovators of the next generation. The key question is whether we as a nation will be able to take these steps with the imagination, creativity and boldness needed. Only time will tell. For the sake of our children, let's hope the answer is yes.



## Forging New, Deeper Partnerships between Business & Higher Education

Brian Fitzgerald

CEO, Business-Higher Education Forum

Innovations in science and engineering have driven economic growth in the United States over the last five decades. According to the President's Council of Advisors on Science & Technology in its February 2012 report, if the United States is to remain the competitive frontrunner in science and technology, the nation will require approximately 1 million more science, technology, engineering, and math (STEM) professionals than will be produced at current rates over the next decade. Further projections suggest that STEM-related employment opportunities will grow nearly 17 percent during the next decade, and that two-thirds of those jobs will require a bachelor's degree or higher. Paradoxically, fewer than 40 percent of students who enter college intending to major in a STEM field complete a STEM degree, the majority switching to non-STEM major during their first two years of college.



The Business-Higher Education Forum (BHEF), the nation's oldest organization of senior business and higher education executives dedicated to advancing innovative solutions to U.S. education and workforce challenges, has launched the BHEF National Higher Education and Workforce Initiative to address the retention challenge and align higher education with emerging national and regional workforce needs. The project's goals include:

- Increasing the number of undergraduates, particularly women and underrepresented minorities, who persist beyond their first two years of college and graduate in high-need disciplines;
- Deepening STEM learning and increasing the relevance of studies to skills and careers, with a focus on the first two years of college;
- Strengthening the alignment of undergraduate education and degree production with government and industry workforce needs, particularly at the regional level;
- Demonstrating the efficacy of a range of intervention strategies, proven highly effective in retaining STEM undergraduates, and using systems dynamics modeling to simulate their impact at scale; and,
- Developing national networks to scale evidence-based practices and influence broader policy through collaborations among the business, and higher education, and government sectors.

The initiative employs complementary regional and national strategies to achieve these project goals. The regional strategy pairs corporate executives and university presidents, whose geographic interests are complementary, identifies specific regional workforce needs and priorities, defines the highest impact intervention strategies and tactics that could address these needs, and develops new education models to address these priorities, with the business

partner highly engaged in the development and deployment of such a solution. These projects will represent hubs for testing, linking, and leveraging different strategies that are all based on a similar evidence base of effective practice and models for deeper business-higher education engagement.

Currently, 12 BHEF regional projects have been launched in such fields as computer science, cybersecurity, large-scale data analytics, and water and materials science. Additional projects will be launched in summer 2013. Projects will be linked through regional and national networks of effective practice; for example, in cybersecurity BHEF has launched both a national and regional (Maryland) network. BHEF's national strategy also links industry associations including the Aerospace Industry of America, Information Technology Industry Council, and National Defense Industry Association, and university associations including the Association of American Universities, American Council on Education, and Association of Public and Land-Grant Universities, to co-create and advance a national STEM higher education strategy and influence national policy. Through the national strategy, BHEF is creating a platform to effectively link and scale its regional projects, while coordinating with the partner association STEM undergraduate initiatives across the nation. More information about BHEF and this Initiative may be found at [www.bhef.com](http://www.bhef.com).









"Skills to Succeed" is Accenture's global corporate citizenship initiative, which focuses on advancing employment and entrepreneurship opportunities in both mature and emerging markets. The company surpassed its original goal, set in 2010, of equipping 250,000 people with skill by working with global and local nonprofit partners that deliver measurable employment and entrepreneurship outcomes at scale. By 2015, the company is committed to equipping 500,000 people around the world with the skills to get a job or build a business.

## Initiatives

### Workforce Training

#### ► Kauffman FastTrac

Georgia, Florida, North Carolina, Texas, Missouri, California, Washington, D.C.

Working with Kauffman FastTrac, an affiliate of the Kauffman Foundation, Accenture provides educational support and resources to veterans interested in starting and growing their own companies including technology or science-based businesses.

#### ► New Sector Alliance

San Francisco, Boston

Accenture awarded New Sector Alliance a grant that will support the expansion of New Sector's social change leadership training curriculum and fellowship programs to provide veterans with the skills to get jobs focused on social or environmental impact. The program will include skills-based curriculum development, technology platform development, training, and fellowships.

#### ► NPower

New York, Dallas

Accenture partnered with NPower's Technology Service Corps (TSC), which provides free IT career training to underserved young adults (with the possibility to secure a Cisco certification), to expand its IT training program nationally, beginning with the opening of its first branch classroom in the Harlem neighborhood of New York.

#### ► NetHope

Worldwide

Accenture partnered with NetHope to help expand its "NetHope Academy," which provides computer science graduates with internships and on-the-job information technology (IT) skills so they can find work in the IT sector.





Adobe supports innovative strategic programs and partnerships that help make our communities better, stronger, and more vibrant places in which to live, work, and do business. Through the Adobe Foundation, community giving, product donations, and training, Adobe provides the tools and resources for people to express their ideas and strengthen their local communities.

## Initiatives

### Primary and Secondary Education

#### ► Adobe Youth Voices Worldwide

Adobe Youth Voices (AYV) is the Adobe Foundation's global philanthropic commitment to ignite creative confidence in youth, by empowering them to find their voice and make it heard.

Working with its partners, the Adobe Foundation engages with more than 4,000 educators around the world to deliver the AYV curriculum and Adobe software donations to young people in 52 countries. AYV inspires youth to tell their own story, equips them with skills to create original media content, and provides a forum to share their voice in their community, and make it heard.

Young people today are faced with challenges from rapidly changing career fields to record unemployment. Creativity is a critical skill they need to adapt to and shape these challenges of the future. Unfortunately, many traditional education systems stifle creativity, instead of fostering

it. AYV arms educators with the skills and tools they need to bring creativity into the classroom and inspire young people to discover the confidence they need to develop their creative skills.

Adobe Youth Voices reaches 24,000 youth and 4,000 educators each year. Since the program's inception in 2006, Adobe Youth Voices has reached 100,000 youth. The global AYV network currently includes 700 sites and schools in 52 countries. In the U.S., recent AYV grantees and sites include nearly 100 U.S. schools and youth organizations in Arizona, California, Colorado, Connecticut, Georgia, Illinois, Massachusetts, Michigan, New Jersey, New Mexico, New York, Pennsylvania, Rhode Island, Utah, Virginia, and Washington.





# Alcatel-Lucent

[www.alcatel-lucent.com](http://www.alcatel-lucent.com)

Alcatel-Lucent 

The long-trusted partner of service providers, enterprises, and governments around the world, Alcatel-Lucent is a leading innovator in the field of networking and communications technology, products and services. With operations throughout the world, including more than 15,000 employees in North America, Alcatel-Lucent is a local partner with global reach.

The Alcatel-Lucent Foundation is the philanthropic arm of Alcatel-Lucent and it leads the company's charitable activities. With a focus on education and volunteerism, the Foundation's mission is to provide youth, with a special focus on girls and young women in targeted underserved communities, with access to education and life skills programs that will help to prepare them to seek employment, higher education, and the opportunity to contribute as citizens and community leaders.

## Initiatives

### Women in STEM

#### ► Young Science Achievers Program Nationwide

Founded in 1988, Young Science Achievers Program (YSAP) seeks to encourage young women and minority students in high school to pursue STEM careers. As an YSAP partner, Alcatel-Lucent employees began mentoring students in the New York metro area, and with the program's growth, now mentor students in Dallas and Fort Worth, Tex., and Naperville, Ill.

Students interested in the program can apply with a research idea and, if accepted, will work on the project throughout the year with mentors from Alcatel-Lucent. Mentors help students review STEM project proposals, share cutting edge technological insight, work hands-on with the young researchers, and attend programs showcasing their finished projects. Students

enrolled in the program gain experience formulating budgets, writing authentic STEM proposals, interacting with STEM professionals, and preparing final presentations.

**“Our high-tech world has an increasing need for people so interested in the world that want to personally investigate how things happen and what might be possible. We need more engineers and scientists and researchers, and programs such as this one to foster students with the potential for that kind of work to pursue careers in those fields.”**

Bea Tassot,  
Foundation Executive Director





Applied Materials demonstrates its value as a global citizen in part by the strategic investment of financial and human resources to improve communities, create opportunities, and offer a brighter future to people around the world. In communities and regions where the company has a presence and its employees live, Applied Materials is committed to making a positive social contribution through strategic education investments focused on student academic achievement and improvement of teacher effectiveness to prepare young people for success in life.

## Initiatives

In 2001, Applied Materials launched its Education Initiative in Silicon Valley to provide underserved youth in high-needs communities with better access to high-quality education. With an initial focus on San Jose, the initiative has grown during the last decade to include Austin and other North American communities. Through collaborative partnerships with school districts, individual schools -- including charter schools and nonprofit organizations -- the Education Initiative has supported improved teaching and learning, impacting 120 schools, 8,200 teachers, and 42,000 students in San Jose alone. By investing over a sustained period of time and consistently measuring and reporting results, Applied Materials has supported the increased number of young people who are equipped and motivated to become the contributors and leaders of tomorrow.

### Women in STEM

#### ► GirlStart: Girls In STEM Conference Austin

GirlStart's Girls In STEM Conference brings together 500 girls from 4th through 8th grades to explore careers in science, technology, engineering, and math. The one-day conference provides unique hands-on workshops led by professional women shaping their industries. Applied Materials sponsors this conference annually and provides the core group of volunteers.

### Primary and Secondary Education

#### ► TAME Austin

Applied Materials supports programs from Texas Alliance for Minorities in Engineering (TAME), a statewide non-profit providing K-12 STEM programming with the goal of increasing the number of minority students who choose STEM careers. Applied Materials provided funding and volunteers to bring



TAME's Trailblazer to students in Manor Independent School District. The Trailblazer is a 40-foot exhibit trailer that houses a variety of engineering and science exhibits targeted at students in grades 3 through 7. The Trailblazer is the only interactive science and engineering museum-on-wheels in Texas.

► **ALearn Middle School Program**  
San Jose

ALearn provides supplemental math instruction during the summer and before and after school in partnership with local school districts. The program enables middle school students to improve their math knowledge and puts them on track on a college prep course sequence in high school.

► **ACE Charter Middle School**  
San Jose

ACE Charter School serves 5th through 8th grade students who have fallen significantly below grade level and helps those students redirect their academic trajectory. Students chart their growth toward reaching proficiency in math by the end of 8th grade through a unique system that encourages them to improve at least one quintile a year until they reach their goals. The school's graduates will enter 9th grade with the skills, knowledge, and work ethic to thrive in a vigorous college-prep curriculum.

► **Breakthrough Austin**  
Austin

Breakthrough Austin provides a path to college, starting in middle school, for low-income students who will be first-generation college graduates. By providing intensive summer academic programming focusing on core subjects, Breakthrough students graduate and attend college at much higher rates than their Central Texas low-income peers. Breakthrough seniors are "college ready" at approximately twice the rate of similar students. Applied Materials provided seed money to start the program in Central Texas and most recently supported program expansion into Manor, Tex.

► **Breakthrough Silicon Valley**  
Northern California

Breakthrough, Silicon Valley's after-school math program, strengthens the math proficiency of middle school students and enables them to pass the qualifying algebra exam, thus qualifying for geometry in 9th grade. 82 percent of Breakthrough students enroll in geometry or higher by 9th grade, besting the national average of 27 percent. This advancement allows students to take advanced math in high school, greatly increasing the likelihood that they will enter and graduate from college.

► **Manor High School: Academic Intervention Program**  
Austin

Applied Materials supports Manor High School's Academic Intervention Program, providing direct intervention in math, science, and social studies for 200 high school students who failed state tests in these subjects. The interventionist works to customize individual plans for success, including instructional support, small group initiatives, and individualized tutoring. The program also is used to inform classroom instruction and provide teacher mentoring to guide data-driven decision making and teaching. The program is targeted at closing the achievement gap and increasing graduation rates for this low-income school.

► **Overfelt High School Summer Math Institute**  
San Jose

Each summer the entering 9th grade class attends a rigorous summer institute, which accelerates their math achievement and at the same time helps establish a culture of academic achievement with a college-going orientation. As a result, the number of students taking higher-level math courses has increased significantly over the past several years along with overall academic improvement. In 2004, the school gave 128 Advanced Placement (AP) tests in 4 subjects. By comparison in 2012, 639 students took AP exams in 12 classes.

#### ► Silicon Valley Education Foundation Northern California

Silicon Valley Education Foundation (SVEF) focuses on improving student performance and teacher development in the critical areas of math and science. Applied Materials is supporting SVEF to lead a collaboration of eight school districts to work together to align math placement policies and increase the number of students who are successful in the required sequence of math courses for college eligibility.

#### ► Techbridge San Jose

Techbridge promotes girls' interest and skills in science, technology, and engineering. An important component of their program is career exploration and providing girls with access to role models and a view into the interesting and useful applications of STEM in the workplace. For the past two years, Applied Materials has hosted students, working through the company's women's affinity group and employee volunteer efforts.

### Higher Education


#### ► Project Lead the Way San Jose State University

San Jose State is an affiliate partner of the national Project Lead the Way (PLTW) program and supports the development and expansion of PLTW in schools in the region. PLTW provides students with a rigorous STEM education curriculum and engages

them in activities, projects, and problem-based learning, which provides hands-on engineering courses that expose them to STEM fields.

#### ► Center for Science, Technology, and Society Santa Clara University

Applied Materials is the founding sponsor of the Center for Science, Technology, and Society, which has a mission of accelerating global, innovation-based entrepreneurship in service to humanity. The Center engages an international network of business, investment capital, and technical resources to build the capacity of social enterprises around the world. It leverages its programs to inspire faculty and students with real-world case studies, distinctive curricula, and unique research opportunities that advance Santa Clara University's vision of creating a more just, humane, and sustainable world.



**“As a global company, we know that solutions to complex problems – both in business and in society – require new thinking, creative ideas, and teamwork. Through our programs, we seek to provide students with the opportunity to understand and appreciate the global and collaborative nature of today’s innovation process.”**

Om Nalamasu,  
Group Vice President,  
Chief Technology Officer

### Teacher Training

#### ► UTeach Internship Program Austin

Since its inception, the UTeach program at the University of Texas has significantly increased the number of highly qualified and sought after STEM teachers. UTeach has more than doubled the number of math majors and increased by six times the number of science majors becoming certified teachers. 90 percent of UTeach program

graduates go on to teach immediately, all of them in the high-need math and science fields. 80 percent of graduates of the UTeach program are still teaching after five years, compared to a national average retention rate of only 65 percent. Nearly half of these UTeach program graduates teach in schools where more than 40 percent of the students receive free or reduced-price lunch. Applied Materials supports the student-teaching internship portion of this program.

## Low-Income and Underserved Communities

### ► Alum Rock Union School District San Jose

Alum Rock school district serves more than 9,000 students in kindergarten through 12th grade -- 100 percent of whom are eligible for the federal meal program. Applied Materials has partnered with the district for the past four years and invested in systemic reform efforts to close the achievement gap. The district has increased the number of schools that meet the minimum state standard from one school in 2008 to 14 schools in 2012.

### ► Eastside Union High School District San Jose

Applied Materials is working with this large high school district, with an enrollment of more than 24,000 students, by investing in the district's initiative to assure that more students pursue a college preparatory curriculum and that all students have equal access to higher-level course work.

### ► Franklin-McKinley School District San Jose

The Franklin-McKinley district is one of the most impoverished areas in San Jose, serving more than 7,100 students in kindergarten through 8th grade. Applied Materials supports school and district transformation efforts to improve teaching and learning outcomes. This includes a grant to extend learning time at the middle-school level to provide additional math instruction. The district has increased the number of schools that meet the minimum state-testing standard from none in 2008 to 10 schools in 2012.

### ► Downtown College Prep San Jose

Downtown College prep enables low-income students to become the first in their families to be accepted and thrive at four-year colleges. Applied Materials has supported the charter school since its inception in 2000. Two campuses are now open in San Jose, and 98 percent of the class of 2012 is enrolled in college.

### ► KIPP San Jose Collegiate San Jose

This KIPP high school opened its doors in 2008, with support from



Applied Materials. The mission of the school is to provide a rigorous, academic program to prepare students to enter and succeed in the nation's finest four-year colleges and universities. The charter school enrolls 400 students, 78 percent Latino and 73 percent of whom qualify for federal meal program. 100 percent of the first graduating class of 2012 is enrolled in college, including the University of California, Davis, Yale University, and the University of Pennsylvania.

## Other Education Initiatives

### ► College Day San Jose

Applied Materials is the primary sponsor of a community-wide effort to create a college-going culture throughout the region and help children and youth plan their path to college. In 2012, more than 30,000 students participated. An aspect of the effort is to inform students and their families of the sequence of courses -- particularly math and science -- that are required to be eligible for college acceptance.

### ► STEM Council Austin

Applied Materials participates in Skillpoint Alliance's STEM Council, a consortium of high-tech executives and education leaders that address workforce and education needs of the engineering and high-tech industries in Central Texas. Working together, the council focuses on:

- Project-based, K-16 STEM education in Central Texas;
- Connecting classroom learning to industry applications;
- Sharing best practices from industry and education; and,
- Increasing the number and diversity of students on a STEM career path.

### ► The Applied Materials Clean Tech Competition San Francisco

The Clean Tech Competition is a research-and-design challenge for high school age youth, intended to contribute to the next generation's understanding of science and technological innovation and inspire and engage Applied Materials employees worldwide. The competition presents students with real-world problems that can be improved by clean technology solutions. In its second year, the program has been expanded, adding Singapore to the inaugural locations of the San Francisco Bay Area in California, and Xi'an, China. The 2013 challenge -- Clean Water for All -- addresses the issue of water purity and access around the world.





## Autodesk®

Design is all around us, and Autodesk believes that it is never too early to start teaching kids about the amazing things that design enables. Students want to learn; they love to learn; and it's exciting to watch them do so. Inside and outside of the classroom, Autodesk is working with students and academic leaders to ensure that the next generation of engineers, architects, and digital artists are prepared for the challenges of the 21st century.

Autodesk's goal is to provide technology that is fun, creative, accessible, and easy to use. Our belief is that software that is easy to access and fun to use is the critical first step in helping kids recognize the wonders of what can be accomplished while developing a lifelong love of design. Educators can use Autodesk technology to reimagine their classrooms, help to foster creativity and critical thinking in their students, and inspire students to change the world through design.

Autodesk is committed to changing the way students learn and educators teach by providing them with access to free Autodesk software, resources, and programs, and inspiring them to imagine, design, and create for the rapidly changing world we live in. By partnering with global academic leaders and institutions, Autodesk is helping educators to build skills and engagement in order to prepare students for successful careers in STEAM (science, technology, engineering, digital arts, and math) fields.

## Initiatives

### Primary and Secondary Education

#### ► The Autodesk Digital STEAM Workshop Worldwide

The Autodesk Digital STEAM Workshop engages students in science, technology, engineering, digital arts, and math through projects developed by industry experts and teachers. Students have access to comprehensive resources such as videos, lesson plans, data sets, and real-time 3D interactive viewers of completed projects.

#### ► Software Grants Nationwide

Autodesk grants products to educational institutions for instructional use, academic research, or for commercial purposes. We also work with our commercial customers to grant software on their behalf.

#### ► Free Educational Apps for STEAM Nationwide

Autodesk offers free educational applications to help students get started in STEAM in or outside of the classroom. These apps are



simple in their execution to inspire students to get started and are ever-evolving to keep them imagining, creating, and designing.

#### ► Project Lead the Way (PLTW) Nationwide

Currently, there are approximately 4,100 PLTW programs in middle schools and high schools in which students are using Autodesk software to complete their coursework. PLTW's comprehensive teacher training program, which incorporates Autodesk technology and curriculum, is delivered through an affiliate network of more than 30 leading engineering colleges and universities around the United States.

#### ► Robotics Nationwide

Autodesk partners with FIRST and VEX Robotics to sponsor events; make free software available; offer access to resources and a collaborative workspace on the Autodesk Education Community; provide the Autodesk Kit of Parts (virtual robot parts modeled in Autodesk Inventor software); and various design competitions.

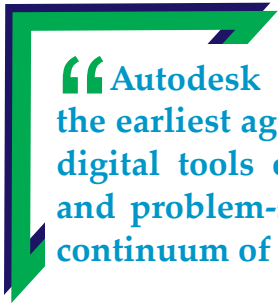
#### ► ShopBot Tools' 100K Schools Initiative Nationwide

Autodesk and ShopBot Tools are working together on a special promotion to support the wider availability of digital fabrication technology and curricula in the place where it matters most for the future: our nation's classrooms. ShopBot Tools' online resource, [www.100kSchools.org](http://www.100kSchools.org), is for teachers and educators who want to put digital fabrication to use in their classrooms.

#### ► The Young Makers Program California

Autodesk provides software and mentoring to The Young Makers Program. The program connects young people (typically ages 12 - 17) with adult mentors and fabricators to

create opportunities for kids to dream up and develop projects for exhibition at Maker Faire each year. The Young Makers Program fostered the creation of a project called The Viper Flight Simulator by a group of secondary students in Northern California. Inspired by Battlestar Galactica, these students thought they could build a better flight simulator and recruited other students through The Young Makers Program to build their team. It was the most complex project they had ever worked on, comprising mechanical, fabrication, and electronics. Funding the project through [kickstarter.com](http://kickstarter.com), it took \$20,000 and eight months to complete and was unveiled at Maker Faire Bay Area in 2012.



**“Autodesk is committed to education from the earliest ages, at school, home, and play. Our digital tools open the doorway to innovation and problem-solving as students step into the continuum of lifelong learning.”**

Carl Bass,  
CEO

## Higher Education

#### ► Autodesk BIM Workshop Nationwide

Autodesk BIM Workshop was created to help prepare architecture, engineering, and construction management students for professional practice. The site boasts an abundance of learning materials, videos, exercises, and much more, designed to teach Building Information Modeling (BIM) and sustainable design practices along with integrated project delivery (IPD) concepts.

### ► Autodesk Simulation Workshop Nationwide

Computer-Aided-Engineering software tools are essential components of the modern design process. The objective of the Autodesk Simulation Workshop is to increase the students' and practicing engineers' fundamental understanding of how these tools work.

### ► Autodesk Sustainability Workshop Nationwide

Autodesk Sustainability Workshop provides students with the tools to learn and understand how to do sustainable design, engineering, and architecture. It promotes the understanding of key concepts, lets students build their software skills, and then lets them put their ideas into practice.

## Low-Income and Underserved Communities

### ► Techbridge California

Autodesk partners with Techbridge, an afterschool and summer program hosted by Chabot Space & Science Center that instills confidence and encourages girls to pursue careers in technology, science, and engineering. The program provides hands-on exercises, exposure to positive role models, family outreach, teacher and professional development as well as providing informative guest speakers.

## Other Education Initiatives

### ► Autodesk Education Community Worldwide

Autodesk provides individual students and educators with free access to more than 40 software titles of the latest 3D design software for non-commercial use. Through this online community, students can download learning resources, search for internships and jobs, and showcase their designs and discuss design topics with peers. In addition, educators can download software, curricula, and exchange best practices. Since its launch in 2006, the community has expanded to more than six million members representing students and educators at more than 176,000 schools.

### ► Autodesk Certification Worldwide

Autodesk Certified User certification confirms that students have the skills necessary to continue their design careers -- whether they attend college, enter the workforce, or work toward additional levels of industry certification after graduation.







CA Technologies is a global corporation with a local commitment. We work to improve the quality of life in communities where we live and work worldwide and are fully committed to advancing social, environmental and economic sustainability. CA Together, our global community affairs program, is driven by the core philanthropic focus of improving the lives of underserved children and communities around the world. We do this by supporting organizations, programs and initiatives that enrich the lives and well-being of others in focus areas including education & technology, health & human services, and the advancement of women in IT. CA Together activities encompass employee volunteerism and matching gifts; in-kind donations of CA Technologies products and services; and wide-ranging partnerships and philanthropic support to community organizations worldwide.

## Initiatives

### Workforce Training

#### ► 100Kin10 Nationwide

Coordinated through Carnegie Corporation of New York and Opportunity Equation, 100Kin10 is a growing partnership of over 100 cross-sector organizations unified by a single goal: to prepare all students with the high-quality STEM knowledge and skills needed to address our most pressing national and global challenges. Partner organizations include corporations, school districts, museums, institutes of higher education, foundations, federal agencies, professional associations, states, and nonprofit organizations.

#### ► Year Up Nationwide

Year Up is a one-year, intensive training

program that provides young adults, 18-24, with a combination of technical and professional skills, college credits, an educational stipend and corporate internship. CA Technologies supports Year Up's apprentice programs in locations including Chicago, New York, San Francisco, and Washington, D.C.

Through CA Technologies' support of Year Up sites, the organization will reach the following targets:

- 70 percent of students will graduate from the program;
- 85 percent of graduates will demonstrate positive outcomes within four months



of graduation. They will be enrolled in college full-time or working full- or part-time; and,

- Those graduates who are working will earn an average wage of \$15/hour.

## Women in STEM

### ► Anita Borg Institute for Women and Technology Nationwide

Since 2005, CA Technologies has supported the Anita Borg Institute for Women and Technology, a nonprofit organization that develops tools and programs designed to help industry, academia, and government recruit, retain, and develop women technology leaders. CA Technologies has a major presence at the organization's annual Grace Hopper Celebration of Women in Computing, designed to bring to the forefront the research and career interests of women in computing. Through CA Technologies partnership with Anita Borg, program attendance grew to more than 5,000 people.

### ► Boys & Girls Clubs of America Nationwide

In partnership with Boys & Girls Clubs of America (BGCA), CA Technologies launched Tech Girls Rock, an initiative that aims to inspire tween and teen girls to discover an interest in technology and down the road consider tech related educational opportunities and careers. CA Technologies employees participate as moderators, panelists and group leaders at workshops throughout the



U.S. The program was highlighted at the 2011 and 2012 Clinton Global Initiative Annual Meetings, and has also been recognized

by Chicago Mayor Rahm Emanuel and New York Mayor Michael Bloomberg.

**“Greater involvement of women in technology is an incredibly important factor in driving growth and development in the IT industry and society at large. This is not just an issue for women, but something that requires engagement from everyone - at all levels.”**

Peter Griffiths  
Executive VP and  
Anita Borg Board of Trustees

Through the Tech Girls Rock initiative, Boys & Girls Clubs of America and CA Technologies have achieved the following outcomes:

- 101 girls from across Chicago participated in the Boys & Girls Clubs of Chicago workshop; 16 volunteers represented CA Technologies;
- 100 girls participated in the Boys & Girls Clubs of Boston's Blue Hill Club workshop; 24 volunteers represented CA Technologies;
- 101 girls from across New York participated in the East Harlem Boys & Girls Club workshop; 26 volunteers represented CA Technologies;
- 100 girls participated in the Plano, Tex., Boys & Girls Club workshop; 18 volunteers represented CA Technologies;
- 135 girls from the Bay Area participated in the workshop at Boys & Girls Clubs North San Mateo County, South San Francisco workshop; 7 volunteers represented CA Technologies; and,
- All 537 girl Club members who participated were surveyed before

and after the workshops. Pre-and post-survey results indicated a:

- ◊ 42 percent increase in girls' interest in a tech-related career after participating in a Tech Girls Rock workshop; and,
- ◊ 37 percent increase in girls' interest in tech-related educational opportunities after participating in a Tech Girls Rock workshop.

## Low-Income and Underserved Communities



### ► Citizen Schools Nationwide

Citizen Schools partners with public middle schools to expand the

learning day for children in low-income communities across the U.S. CA Technologies supports STEM education initiatives in the organization's Massachusetts chapter, and several employees serve as apprenticeship instructors at a Citizen Schools partner school.

Through CA Technologies' partnership with Citizen Schools, the organization was able to achieve the following goals:

- 85 percent of students participating in Citizen Schools programs will maintain an A or B grade in English and language arts (ELA) and math;
- 50 percent of students participating in Citizen Schools programs will improve a C/D/F grade in ELA and math;
- Students will improve proficiency on state assessments by 5+ percentage points in ELA and math;
- 70 percent of students will improve their leadership and oral presentation skills;
- 80 percent of students will demonstrate an increased understanding of the steps

necessary to succeed in high school, college, and a career;

- 80 percent of students will report a belief in their ability to undertake action to achieve their goals and the importance of education; and,
- Each Citizen Schools campus will maintain an average attendance rate of 95 percent.

### ► DonorsChoose.org Nationwide

DonorsChoose.org is an online charity that makes it easy to help students in need through school donations. CA Technologies supports programs and initiatives that focus on STEM education in underprivileged schools throughout the United States.

### ► NPower New York, Dallas

NPower is a national nonprofit that brings information technology services to other nonprofits and training to young adults. CA Technologies supports the organization's Technology Service Corps program, which enlists and trains low-income young people to meet the demand for skilled technology workers in the U.S.

Through CA Technologies' support of NPower's Technology Service Corps (TSC) program, NPower will achieve the following outcomes:

- Admit 180 individuals into TSC's NYC program sites (100 from Brooklyn and 80 from Harlem)
  - ◊ Achieve 80 percent graduation rate
  - ◊ Achieve 80 percent employment rate of program graduates one year post graduation
- Admit 25 individuals into TSC's Dallas site
  - ◊ Achieve 75 percent graduation rate (80 percent annually after year

one of Dallas start-up)

- ◇ Achieve 75 percent employment rate of program graduates one year post graduation (80 percent annually after year one of Dallas start-up)

#### ► PENCIL New York

Since 2007, CA Technologies has partnered with PENCIL, a nonprofit organization that develops relationships between businesses and public schools. The company works with two schools in the East Harlem neighborhood of New York, where STEM initiatives and technology capacity are being built. CA Technologies recently expanded its partnership with PENCIL, launching Wired for Success, an initiative which will provide funding for PENCIL's Partnership Program as they build capacity for STEM education in New York city schools.



- CA Technologies' support will help PENCIL double the number of schools PENCIL is serving -- from approximately 400 to 750 (half of New York City public schools).
- According to the 2011-2012 PENCIL Impact Survey:
  - ◇ Nearly 80 percent of PENCIL principals feel more confident as leaders citywide
  - ◇ Four out of five principals say their business partner helped them become more strategic in their decision-making
  - ◇ Teachers in PENCIL schools report greater attendance at parent-teacher conferences than at other schools
  - ◇ 96 percent of PENCIL students are

more aware of their college and career options

- ◇ 90 percent of principals report that PENCIL partnership activities boosted student engagement
- ◇ Nearly 7 out of 10 principals feel that students who consistently participated in PENCIL partnership activities exhibit improved academic performance

## Early Education

#### ► Sesame Workshop Worldwide

CA Technologies and Sesame Workshop, the nonprofit arm behind Sesame Street, are partnering to develop a free online STEM Hub with educational resources to help preschool children, educators, parents, and caregivers explore STEM concepts in fun and engaging ways. The hub will be rolled out in stages, with an initial launch scheduled for late 2013.

## Other Initiatives

#### ► Change the Equation Nationwide

The mission of Change the Equation is to foster widespread literacy in STEM that sparks an innovative spirit in students and prepares them for postsecondary options. The organization offers a broad umbrella where companies can connect, identify opportunities for jointly leveraging their STEM investments, and achieve more together than they can separately. CA Technologies has been a member since 2011.







Cognizant

Cognizant is working to rethink our role in improving education in our communities. To mitigate the far-reaching impact of inadequate STEM talent on our economy, competitiveness, global stature, and quality of life, Cognizant's Making the Future education initiative is designed to reinvigorate a passion for STEM learning where making and playing become learning, and children rediscover the joy of innovating, creating, and solving.

Making the Future draws inspiration from the Maker Movement, a broad based community that celebrates the art of designing and building really cool things, either doing it yourself (DIY) or with others (DIWO). In addition to inspiring young people toward careers in science, technology, engineering, and math, we seek to develop 21st century skills such as creativity, innovation, and collaboration that will create a brighter future for our children, preparing them to be tomorrow's leaders in our global economy.

There are four key components to our Making the Future initiative:

- Our flagship program, the Making the Future After-School and Summer Program.
- Financial, in-kind, and volunteer support for nonprofit organizations that inspire children through hands-on learning opportunities.
- College scholarships for students interested in pursuing STEM degrees.
- Advocacy for change in the way STEM education is delivered.

## Initiatives

### Primary and Secondary Education

#### ► Making the Future After-School and Summer Program Nationwide

Our flagship Making the Future initiative is the after-school and summer program. Kids in these programs engage in Maker-oriented, DIY activities, such as working with 2D graphics software and sending those designs to a fabrication tool such as a vinyl cutter, developing 3D designs using CAD software

and printing them on a 3D Printer, electronics projects, working with circuits, and low-cost open source microcontrollers such as the Arduino and Raspberry Pi, programming those devices using languages like Processing or Scratch. Other projects include robotics, creating digital or mechanical musical instruments, hydroponics, agricultural and food related projects, and sewing and e-textiles. Launching in 2012, 10 After-School and Summer Programs were piloted in locations across the country. During an open grant process in 2013, 25 programs were



selected to receive funding to implement Maker programs across 18 states. In the portfolio of grant recipients are children's and science museums, Boys and Girls clubs, 4H chapters, schools, and other child-serving organizations. The program targets boys and girls from all backgrounds; most programs tend to focus on children from 5 - 18 years old, with upper elementary and middle school age being a sweet spot. Cognizant's goal is to grow the program during the next five years to 500.



#### ► Engineering is Elementary Nationwide

Engineering is Elementary (EiE), a Boston Museum of Science program, provides basic engineering curriculum for use by teachers in kindergarten through fifth grade. Cognizant is providing EiE with substantial financial support, which will help to fund the creation and collection of video training resources for elementary school teachers and support expanded and deeper implementation of the EiE curriculum. The three-year project will expand EiE's reach to educators anywhere at any time, especially those who cannot attend face-to-face professional development workshops. The videos will be available online and in DVD format. EiE micro-

grants are offered by Cognizant associates to neighborhood schools to support their local teachers in bringing hands-on engineering curriculum into their classrooms.

#### ► New York Hall of Science New York

The Cognizant Maker Space at the New York Hall of Science (NYSCI) opened in March 2012. This space consists of a permanent 1,200 square-foot area located inside the NYSCI main hall, where children of all ages can experience the joy of making things, testing them, and displaying them using a mix of fabrication, digital, and everyday tools and objects. The Cognizant Maker Space will add a new dimension to NYSCI's ability to create engaging and innovative learning experiences for school groups, visitors, and families. NYSCI serves as the selection chair for our Making the Future scholarship program and is a collaborating partner on A Blueprint: Maker Programs for Youth.

#### ► Maker Education Initiative Nationwide

Cognizant is a founding member of the newly launched Maker Education Initiative (MakerEd) whose mission is to create more opportunities for young people to make, and, by making, build confidence, foster creativity, and spark interest in science, technology, engineering, math, the arts -- and learning as a whole. Cognizant is also a platinum sponsor of the Maker Corps, a MakerEd initiative that will address the need for personalized support and expertise in introducing maker-oriented experiences in existing educational programs across the nation. By building a Maker Corps to facilitate and scale the number of Making programs, the potential for "every child a Maker" can be a reality.

### ► Maker Faire Nationwide

As a Goldsmith sponsor of Maker Faire, a two-day, family-friendly festival of invention, creativity, and resourcefulness, and a celebration of the Maker movement, Cognizant has played an integral role in promoting “kids make” activities. As host of both the Young Maker Pavilion at the New York Hall of Science and the Make, Play Day in the Bay area, Cognizant associates and students from Cognizant sponsored Maker programs, actively engaging kids in workshops and creative tinkering sessions that provided hands-on project based activities. This extravagant science fair is an opportunity to see the latest tech gadgets and is appropriately called “the greatest show (and tell) on Earth.”

## Higher Education


### ► Making the Future Scholarship Nationwide

Cognizant's Making the Future college scholarship program is a design-based scholarship and candidates are required to submit a 3-minute video of a hands-on project that illustrates both creativity and innovation. The top 20 projects are each awarded a \$5,000 college scholarship. Undergraduate students as well as children of Cognizant associates who are pursuing a STEM career are eligible for this scholarship.

## Workforce Training

### ► NPower New York

Cognizant has invested dollars and human capital to support NPower programs. Technology Service Corps (TSC) works with leading corporations to provide qualified young adults with free IT training, professional skills and mentoring, internships, job placement services, and brighter futures through careers in IT. TSC was launched in 2002 and prepares underserved young adults (age 18-25) in New York to become IT professionals in the nonprofit, public, and business sectors. Technology Service Corp is a 22-week intensive training program for young adults.



**“Our children have the energy and talent to become the next generation of global innovators—they have the passion and motivation to fuel positive change. It’s our job to translate that passion and motivation into a desire to pursue opportunities in STEM-based endeavors. Our future depends on it.”**

Francisco D'Souza,  
CEO

Cognizant is actively involved in the Npower Community Corps Middle School Girls Initiative that provides mentoring, presentations, and job shadowing experiences that focus on IT career pathways.

## Low-Income and Underserved Communities

### ► Citizen Schools Nationwide

Citizen Schools is a national nonprofit organization that works with middle schools in low-income areas to expand the learning day for students and connects scientists, engineers, and other professionals as Citizen Teachers to engage students in hands-on,

interactive activities. Cognizant is a National Leadership Partner providing financial, human, and in-kind resources. Cognizant associates become the second shift of educators bringing the joy of learning in STEM disciplines by creating and teaching “apprenticeships,” an 11-week session culminating in a WOW! to showcase the student’s mastery of skills learned and projects completed.

#### ► National Academy Foundation Nationwide

National Academy Foundation (NAF) is an acclaimed network of career-themed academies that opens doors for underserved high school students. For 30 years, NAF has refined a proven model that provides young people access to industry-specific curricula, work-based learning experiences, and relationships with business professionals. The NAF Student Certification Assessment System combines classroom and workplace learning to measure career and technical knowledge and skill proficiencies. These proficiencies are aligned with industry-recognized standards including foundational 21st century skills essential in establishing a student’s overall readiness for college and career. In addition to financial support, Cognizant associates

assist the Academies of IT and Engineering by volunteering in classrooms, acting as mentors, introducing career pathways, and serving on local Advisory Boards.

## Other Education Initiatives

#### ► Change the Equation Nationwide

Cognizant is an active member of Change the Equation (CTEq), a CEO-led initiative to cultivate STEM literacy. Change the Equation is bringing together companies like Cognizant across multiple sectors, all of which are dedicated to preparing students for STEM-related careers as an investment in their business, the economy and our democracy. Through innovative and effective company-led programs, Cognizant and CTEq aim to fill the opportunity gap with capable and enthusiastic STEM-literate young people.







EMC is a global leader in enabling businesses and service providers to transform their operations and deliver information technology as a service (ITaaS). Through innovative products and services, EMC accelerates the journey to cloud computing, helping IT departments to store, manage, protect, and analyze their most valuable asset - information - in a more agile, trusted, and cost-efficient way.

In order to sustain and continue EMC's technology innovation, it is critical that it invest and support STEM (science, technology, engineering, and math) initiatives. EMC Corporation's primary focus is K-12 education, and champions STEM by sponsoring challenging math, science, and engineering competitions; supporting creative resources for scientific inquiry with after-school programs, online resources and robotics; and partnering with nonprofit organizations and educational institutions. Numerous studies have concluded that U.S. schools aren't producing enough skilled mathematicians, engineers, and scientists. Through its concerted efforts, EMC Corporation hopes to significantly boost the number of college graduates in these critical fields and build a pipeline of next generation

## Initiatives

### Low-Income and Underserved Communities

#### ► Citizen Schools California, North Carolina, and Massachusetts

EMC has partnered with Citizen Schools, impacting the lives of 2,488 low-income middle-school students in California, North Carolina, and Massachusetts. Employees volunteered 756 hours to mentor and inspire students in the STEM fields. EMC employees in North Carolina were awarded the North Carolina Volunteer Team of the Year award in 2012.

### Primary and Secondary Education

#### ► Massachusetts State Science and Engineering Fair Massachusetts

EMC regularly contributes to science fairs in grades 6-12 across Massachusetts. EMC employees volunteer their time to participate as judges for the event, and the company contributes \$500,000 in scholarships and prizes for winning ideas.

#### ► The Tech Museum of Innovation San Jose

EMC works with the Tech Museum of Innovation at San Jose to sponsor an annual team design challenge for students in grades 5-12. The challenge introduces and reinforces

the science and engineering design process with a hands-on project geared to solving a real-world problem.

► **The Advanced Robotics Initiative (ARI) at Quinsigamond Community College Massachusetts**

EMC sponsored 750 students who participated in robotics competitions across Massachusetts. In Worcester Public Schools, it is the largest academic extracurricular activity in the district. Students and parents seek out this program yearly, with teachers/coaches reporting that students have lower absence rate on days with robotics activities.

► **Science Buddies Massachusetts, North Carolina, Utah, and California**

Science Buddies has helped 80,000 K-12 students in Massachusetts, North Carolina, Utah, and Northern California to create science and engineering projects of outstanding quality. Students interact with science and engineering role models, compete in their local science fairs, and ultimately become inspired to pursue further education in science and technology.

**“I’m the director of the Alameda County Science and Engineering Fair. We absolutely refer to science buddies as the ‘go to place’ for science fair ‘how to’s’... If you haven’t yet created a button that says I (heart) Science Buddies – then you should make hundreds of thousands for all of us to wear – to show our appreciation of the incredible site! ”**

Patti Carothers,  
Director Alameda County (Calif.)  
Science and Engineering Fair

Science Buddies serves a diverse group of students in EMC communities:

- Santa Clara County, Calif.: Of Science Buddies students answering a question about their ethnicity, 28 percent are Asian American and 13 percent are Latino American.
- Boston, Mass.: 12 percent are African American and 17 percent are Latino American.
- Raleigh/Durham, N.C.: 56 percent of students registering are girls, in line with our overall service to girls worldwide.

► **STEM Center for Education at Northeastern University Boston**

In an effort to increase student achievement in the sciences, EMC works to bring together 100 middle school and college students, where STEM insight can be shared.

► **The North Carolina State High School Mathematics Contest North Carolina**

EMC sponsored a statewide competition in comprehensive mathematics for students who previously excelled in regional contests around the state. The company provided scholarships for winners in algebra and geometry.

## Women in STEM

► **Girls Inc. of Worcester**

EMC employees are involved with 99 girls in grades 8-12, helping them to explore career paths and post-secondary opportunities in STEM.



#### ► Worcester Polytechnic Institute Worcester

EMC sponsors 30 middle school girls the summer before their seventh grade and nine high school women who act as counselors at Camp Reach. The camp is an opportunity for discovery and hands-on engineering.

### Teacher Training

#### ► LIFT2 Massachusetts

Leadership Initiatives for Teaching and Technology (LIFT2) provides both experienced and developing middle- and high-school STEM teachers with a unique professional learning program that combines graduate coursework with company-sponsored externships. Through the combination of graduate courses offered through Framingham State College and paid, career-relevant summer employment opportunities, LIFT2 presents teachers with the opportunity to apply industry experience to their classroom lessons.

#### ► Resource Area For Teachers (RAFT) Nationwide

EMC supported 12,050 educators with the tools and support needed to ensure that 828,00 students had the opportunity to learn with hands-on projects.

#### ► Industry Initiatives for Science and Math Education (IISME) California

In 2012, EMC sponsored an IISME Peer Coach for the Summer Fellowship Program. IISME Summer Fellowship Program focuses its attention on the professional development of teachers in the Bay Area by ensuring that they are able to provide new ideas and fresh strategies to inspire students to pursue careers rich in science, math, and technology.

### Other Education Initiatives

#### ► Robotics Education and Competition Foundation California, Washington, Utah, Massachusetts, and North Carolina

As part of a global robotics competition, EMC sponsored 44 new teams in five states and 6 teams at the World Championships. The competition offers unique and challenging games that put middle- and high-school students' engineering and technology skills to the test.







As communication changes the way we live and work, Ericsson is playing a key role in this evolution. Using innovation to empower people, business, and society, we are working towards the Networked Society, in which everything that can benefit from a connection will have one. Our vision is to be the prime driver in an all-communicating world. That vision depends on the robust support of academic communities and education programs here in the United States, which fosters innovation and helps to develop new technologies.

## Initiatives

### Women in STEM

#### ► Annual Girls in ICT Day Worldwide

Girls in ICT Day is an Ericsson-sponsored initiative to encourage women of all ages and backgrounds to explore STEM careers. The event is a chance for Ericsson women to volunteer to mentor young women and share their own reasons for choosing a STEM career. This year, employees from Ericsson's headquarters visited with high-school women at Berkner High School's STEM Academy in Richardson, Tex.

### Low-Income and Underserved Communities

#### ► Connect to Learn Worldwide

Ericsson is a founding partner of Connect to Learn, which helps to ensure students around the world have access to a modern education. The program's three areas of focus are connectivity to make sure even students in the developing world can have access to a 21st

century education; secondary scholarships for young people in impoverished communities who otherwise would not receive schooling beyond a primary education; and quality teaching and learning resources to share School-To-School Connections. Connect to Learn also provides the opportunity for American students to see first-hand how communities around the world live.

### Higher Education

#### ► Networked Society Tech Challenge Boston

Ericsson sponsors the Annual International Tech Strategy Business Case Competition hosted by the Boston University School of Management. The invitation-only, MBA-level competition aims to solve a market challenge focused on technology in business strategy and operations. Each year, some of Ericsson's top executives are on-site to judge the competition. Some of the world's leading MBA programs have sent teams to Boston, where they will be challenged and their solutions judged by leading professionals.





Education lies at the very core of Google's mission to organize the world's information and make it universally accessible and useful. We believe in the power of the web to help people discover, connect, and learn. That's why we support collaborative learning in communities around the world, and why we invest heavily in education programs, initiatives, and partnerships through our products and tools.

Through our diverse set of education efforts, we invest in the next generation of computer scientists and engineers, providing opportunities for all students to engage more directly in their learning through technology. Our education work in the United States and around the world centers on three aims:

- Making learning engaging and inspiring for students, particularly in STEM and computer science (CS) subjects
- Empowering innovative communities, including educators and nonprofit organizations
- Building a foundation of technology and access for all of the world's teachers and students

We work in partnership with educational organizations and communities around the world, both on the ground and on the web. Our goal is to provide education support at scale and, wherever possible, through the educators, students and nonprofits doing great work. We seek to amplify what's already occurring, and complement it where there are gaps that Google can help fill.

## Initiatives

### Primary and Secondary Education

Getting students excited about and involved in STEM and CS at the primary and secondary school level is critical. Through a variety of programs, competitions, awards, and tools, we hope to inspire the next generation of big ideas. Here are a few examples of Google's many education initiatives for K-12 students:

#### ► Google Science Fair Worldwide

The Google Science Fair is an online science competition open to students, 13-18, from around the globe. A partnership with National Geographic, LEGO, Scientific American, and CERN, the Google Science Fair encourages young students to find answers to big questions through scientific inquiry and experimentation. Prizes include over 100,000 in scholarship funds, a trip

with National Geographic Expeditions and experiences at CERN, LEGO and Google. Every year, tens of thousands of students apply to the Science Fair and in 2012, the program was expanded to thirteen languages. Past winners include Shree Bose of Texas, who explored how cancer cells become resistant to chemotherapy, and Brittany Wenger of Florida, who developed an app that helps doctors test for breast cancer.

#### ► Computer Science for High School (CS4HS) Worldwide

CS4HS is an initiative to promote computer science and computational thinking in secondary school curriculum. With a grant from Google, universities develop 2-3 day workshops for local computer science teachers. Since its inception in 2009, the program has grown sevenfold, with last year's CS4HS workshops training more than 3,200 teachers around the world, including more than 1,300 in the United States. One teacher, Gina McCarley, attended a CS4HS event without previous Computer Science knowledge. Afterwards, Gina went back to her school, where she created a STEM project that tracked the various behaviors of wild hogs in northern Alabama. She submitted the project to a nationwide STEM contest offered by Samsung and was one of the national grand prize winners, securing about \$125,000 worth of equipment for her school.

#### ► RISE Awards Worldwide

Google Roots in Science and Engineering (RISE) is an awards program that provides funding to innovative organizations working with primary, secondary, and university students in STEM and CS enrichment programs. RISE is unique in that Google doesn't just provide the winners with funding, but works to make sure they become part of a community by sharing best practices among recipients. RISE has awarded more than \$1 million to organizations in 25 countries across the United States, Europe,

Middle East, Asia, Latin America, and Sub-Saharan Africa. One RISE recipient, Black Girls Code, taught 175 girls of color, ages 7-14, from underrepresented communities about computer technology via after school programs and a six week intensive summer training program. They were also able to expand their program from San Francisco to pilot weekend workshops in five other major U.S. cities.

## Higher Education

Our commitment to higher education focuses on stimulating interest in computer science. From scholarships to summer internships, our programs offer university students opportunities for instruction, mentoring, and networking in a challenging learning environment that embraces all students, including those in historically underrepresented communities.

#### ► Scholarships Worldwide

Google has awarded over \$12.7 million to upwards of 3,000 students worldwide in fields such as engineering, computer science, and leadership. Scholars also have many opportunities to network, build skills, attend workshops, and further their professional development.

#### ► Engineering Practicum Nationwide

The Engineering Practicum is an internship program focused on freshmen and sophomore students majoring, or intending to major, in Computer Science or Electrical and Computer Engineering. This program includes three components: a software project, skills-based training, and professional development. In 2012, we had 120 interns from approximately 40 different schools and this year, we've grown the program by 20 percent. Many students are eventually offered additional internships and engineering positions after they graduate.

### ► Computer Science Summer Institute (CSSI) Nationwide

Google's Computer Science Summer Institute aims to increase the pipeline into the Computer Science major and boost retention, particularly for students underrepresented in the field. Since 2008, the program has brought over 180 students to Google for a summer educational program that includes an interactive and collaborative computer science curriculum. Past participants have repeatedly identified CSSI as the reason they have stuck with Computer Science in college and year after year students report an increased interest in CS after participating in the program. Three prior CSSI participants are now full-time Google employees and many more have participated in our summer internship programs.

## Other Education Initiatives

Google makes investing in educational communities a top priority. We work with teachers and organizations to provide resources, expertise, training and tools that help them integrate new technologies into their teaching. We also support innovation in education with content, coursework, and tools that are open, accessible, easily customized, and affordable to learners at all levels. Here are some examples of how we are supporting educators and schools:

### ► YouTube EDU Worldwide

YouTube EDU is a special collection of educational videos containing more than 850,000 free videos from over 1,000 different partners. Partners range from respected organizations like Stanford University & National Geographic to educators and students who submit their own creations. YouTube for Teachers contains over 300 playlists of frequently taught topics ranging from Expected Value in Statistics to U.S.

Government Basics for elementary students. Innovators like Steve Spangler Science and Henry Reich of Minute Physics have created YouTube EDU channels with short, inspiring, educational videos and quickly gained millions of views.

### ► Google Apps for Education Worldwide

Over 20 million students, faculty, and staff use Google Apps for Education, a free version of Google's integrated web-based suite of collaboration and productivity tools. We offer these tools like Gmail, Hangouts (virtual meetings), and Documents (word processing) to schools for free and without advertisements. As of 2012, students in over 185 countries were working better with Google Apps for Education.

### ► Google Giving Worldwide

In 2012, Google gave \$6.9 Million in education related grants through Google Charitable Giving. Google's Global Impact Awards are one way Google supports organizations that are using technology and innovative approaches to tackle some of the world's toughest human challenges. We look for nimble, entrepreneurial organizations that have a specific project that tests a big idea and a brilliant team with a healthy disregard for the impossible. One 2012 Impact Award recipient, DonorsChoose.org, will provide public schools across the U.S. with start-up materials to create 500 new advanced placement science and math courses. Materials could include lab supplies, calculators, or textbooks. In addition, DonorsChoose.org will help successful Advanced Placement teachers reinvest in their classrooms and students.





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HP creates new possibilities for technology to have a meaningful impact on people, businesses, governments, and society. The world's largest technology company, HP brings together a portfolio that spans printing, personal computing, software, services, and IT infrastructure to help solve customer problems.

At HP, we strive to improve lives and business every day by focusing the collective power of our people, portfolio, and partnerships where we can have the greatest impact -- environment, health, education, and community.

Because we know we can't solve all the world's challenges alone, we cultivate relationships with diverse stakeholders, such as social entrepreneurs, industry peers, customers, governments, academics, thought leaders, businesses, and nongovernmental organizations. By bringing together the expertise of our more than 300,000 employees in collaboration with our partners, we make technology work for people in powerful ways that create a positive impact on the world.

Students today are graduating into a flat, global, and competitive economy. Those who are ready to collaborate across time zones, languages, and cultures are likely to be the ones most prepared to succeed in the 21st century.

In a complex, interconnected, technology-enabled world the bar has been raised on the baseline of science, technology, engineering, and math, or "STEM literacy," needed to compete and lead in the 21st century. Nations around the world are facing extreme challenges that will require creativity, collaboration, and STEM(+) literacy to solve.

These critical challenges in education cannot be solved alone. Collaboration between education leaders, institutions, and governments is vital to develop innovations and to scale them for the benefit of many more teachers and students.

## Initiatives

### Secondary and Higher Education

#### ► HP Catalyst Initiative Worldwide

Launched in 2010, the HP Catalyst Initiative

is applying HP's global reach, technology competencies, and innovation capabilities with education partners around the world to help address critical STEM education challenges and support innovations that



significantly contribute to enhanced student performance.

The HP Catalyst Initiative is a global network of education organizations using technology to create innovative teaching and learning in STEMx disciplines and skills. STEMx refers to science, technology, engineering, math, and related disciplines such as computer science, as well as critically important 21st century skills.


Members of the Catalyst network include 56 schools, universities, nonprofits, and social enterprises from 15 countries that are placed into six research-based consortia. Each consortium receives technology and professional support. In April 2012, the HP Catalyst Initiative held an annual summit in China to exhibit projects and develop a program of discussion, knowledge exchange, and collaboration with a focus on increased teacher training between consortia and regions. For the 2013 HP Catalyst Summit, delegates gather in Sao Paulo, Brazil, to continue their work and to launch the new HP Catalyst Academy.

The six consortia themes are:

- **Multi-versity:** exploring the future of online STEMx teaching and learning
- **Pedagogy 3.0:** developing innovative approaches for teacher preparation, induction, and on-going development
- **Global Collaboratory:** creating models for engaging students in global problem solving, helping to address some of the world's most urgent social challenges
- **The New Learner:** integrating formal and informal learning to help students create a personal learning network of resources, organizations, and people
- **Measuring Learning:** using technology to measure what matters, including critical STEMx competencies

- **STEM-preneur:** exploring novel ways to combine STEM education with the skills and passion of entrepreneurship

In 2012, HP presented 10 consortia with HP Catalyst Leadership Awards to scale up exemplary projects. HP contributed \$2 million in 2012, bringing our total investment to \$14 million since the initiative launched in 2010. In addition, Catalyst members have secured nearly \$11 million from other sources to support their research and expansion. The 56 member organizations estimate that the initiative has impacted well over 130,000 students worldwide. In April 2013, the Organization for Economic Cooperation and Development (OECD) produced a comprehensive report about the HP Catalyst initiative.



“Solving challenges in a complex world requires innovation, communication and collaboration on a global scale. HP’s Catalyst program is leading the way by creating a network of educators learning and creating solutions together to help improve STEMx education and prepare the next generator of innovators.”

Leslie Conery  
Chief Education Officer, ISTE

Some 2012 highlights from the HP Catalyst network include:

In the Measuring Learning HP Catalyst consortium, Amrita University in India is using the Collaborative Assessment Platform for

Practical Skills (CAPPS) to improve STEM learning for students in rural locations using virtual teaching. Running on donated HP mini notebooks and PCs, CAPPS enables teachers to conduct simulations and virtual experiments online as well as monitor student performance. In the pilot program across nine schools involving 3,400 students, 90 percent of teachers found CAPPS to be effective and 70 percent of students considered it to be a useful tool to support more individualized and self-guided learning. In 2012, the program expanded to 36 schools and more than 9,400 registered users. The target is to reach 50,000 students by 2014.

Within the Global Collaboratory consortium two middle schools, one in Stamford, Conn., and the other in Jinan, Shandong Province, China, are conducting real scientific research into water pollution.

The American students are tracking data on water quality, topography, drainage, flora, and fauna. They also work with community organizations to investigate the impact of communities and urban development on the local waterways. The Chinese students are studying the nearby Huangshui River Basin, one of the most polluted river systems in China. Working collaboratively, these youngsters are casting an international spotlight on the growing issue of poor water quality.

Throughout the project, students learn how to conduct water quality tests; create maps and analyze data around water quality; learn how to use GIS (Geographic Information Systems) to track, measure, and analyze collected data; collaborate with local water quality experts around water quality; and share results between the two schools.

The students are testing pH, salinity, dissolved oxygen, fecal coliform, turbidity, water flow, water depth, and temperature, using GPS, HP mobile calculating lab probes, HP calculators, notebook computers, and GIS

software to document their findings. Real research with real global collaboration, along with direct exposure to scientists and engineers, helps these students make connections between problems in their communities and the science involved in solving these problems.

Surveys held by the schools show increased student engagement and interest in science-related subjects. By practicing skills and techniques that can help them in future science-based or environmental careers they are also addressing urgent global challenges.

## Higher Education

### ► InkSurvey Nationwide

Knowing what your students are thinking and deciphering their misconceptions has always been the goal of formative assessment. The Colorado School of Mines in the United States, a project in the Measuring Learning consortium, developed InkSurvey, a free, web-based polling tool that reveals student comprehension during science instruction. Using HP tablet PCs and digital pens, students input answers to open-format questions posed by the instructor.

The use of real-time graphical polling help teachers adjust instruction to enhance student learning. Deployment of the program at the Colorado School of Mines showed improvement in student understanding of chemical engineering topics. From a baseline of 45 percent, results showed an improvement to 58 percent when using simulations. The addition of real-time polling with an interactive teaching approach increased the scores 78 percent, almost doubling what could be learned from simulations alone.

### ► Remote Laboratories Canada

A Multi-Versity consortium project in Canada at Thompson Rivers University created the

British Columbia Integrated Laboratory Network (BC-ILN) to bring modern scientific experiments to small rural schools and colleges that lack funding and infrastructure for a full laboratory. BC-ILN enhances science education in remote locations by providing HP tablets and workstations, access to online labs, and remote lab instrumentation and curriculum. Early feedback suggests that engaging students with modern scientific equipment sparks interest in science education. By the end of 2013, more than 1,500 students sampled from ten participating campuses will have been analyzed.

## Low-Income and Underserved Communities

### ► GIST Virginia

In the New Learner consortium, Longwood Institute's (Boston), "Global Innovation in Science and Technology (GIST)" project, 2,000 low-income secondary students and their teachers in Virginia, Ghana, and India are working in collaborative groups developing models, simulations, and games by introducing students and teachers to simple programming tools like "ALICE" and "SCRATCH".

Teachers were first trained in using programs such as Scratch, and observing the different ways they integrated it into the content of their curriculum. Online learning resources with video tutorial for Scratch, Alice, and Kodu are available teachers, making the approach sustainable and attainable for any interested teacher around the world.

The students, middle school girls, were then involved in the design of "programmable clothing" that builds skills in computational thinking, problem solving, and creativity. This takes students beyond being "consumers" of STEM information to creators, effective communicators, and inventive thinkers who see STEM in a global context.

### ► Project ACCESS Nationwide

Northwestern University (Evanston, Ill.), in the Multi-Versity Consortium, developed Project ACCESS to enhance STEMx education and address the lack of adequate laboratory science facilities in economically challenged or underfunded rural and urban public high schools. They are creating a network of "online labs" that provide students with access to and remote control of actual laboratory setups that are hundreds or thousands of miles away. These are not simulations. Rather, these are sophisticated lab experiences supported by a system for students to collect data and record observations in their online science notebooks that are accessible to peers and teachers. This augments the traditional, centrally provided service model to one where schools would eventually use open-access remote lab equipment rather than purchasing it locally for each school or classroom.

Teachers are trained on curriculum development for use of online labs and other cyberlearning resources in the classroom. HP lends tablets to participating schools as a part of a loaner program that provides technology and equipment each academic year.

The loaner program and teacher training "levels the playing field" and increases exposure of STEM education to the students most in need. The use of remote labs also saves space at the school, lowers equipment costs, exposes more students to authentic STEM education, and reduces the time spent in the classroom setting up and cleaning up, leaving more time for experiments and class discussion.

A pilot program in the Chicago area showed a 15 percent average increase in test scores among nine participating schools where the number of students using Project ACCESS increased from approximately 300 in 2010 to close to 5,000 in 2012. Globally, the network of remote labs made available online

through Project ACCESS increased by 74 percent between 2011 and 2012.

## Workforce Training

### ► HP LIFE e-Learning Worldwide

There are more than 75 million unemployed youth around the world who want and need access to educational resources that help them develop or support a business idea. There are also many established entrepreneurs who struggle with their small business and adults who have the desire to launch a business.

Entrepreneurs are the backbone of our global economy for today and the future. Many new business owners lack IT and business skills, and these skills are critical to turn good ideas into economic success.

Entrepreneurs create the small businesses that support our global economy. The HP Learning Initiatives for Entrepreneurs (HP LIFE) supports enterprising individuals worldwide that want to start up or expand small businesses but lack the expertise, IT skills, and resources. The program provides access to technology and training in IT and business skills.

In 2012, we relaunched HP LIFE as a free, cloud-based e-learning program to exponentially expand its reach worldwide. The expanded e-learning platform allows students, entrepreneurs, and small business owners to access business and IT coursework in their own time, at their own pace, wherever they are. Developed with our NGO partner, Education Development Center, Inc., HP LIFE e-learning offers skills training focused in four core business categories: finance, marketing, operations, and communication. The online platform will also introduce new modules, webinars, and e-mentorship from HP employees. All modules are currently available in English and we will roll out translations in four languages in 2013.

## Other Education Initiatives

### ► Social Innovation Relay Worldwide

Through our partnership with Junior Achievement Young Enterprise, we inspire social innovation and entrepreneurship in students aged 15 through 18. Launched in 2011, the Social Innovation Relay (SIR) is a worldwide competition that challenges students to create innovative business solutions that address social needs. Using interactive meeting technology and online resources supported by HP, students collaborate and receive mentorship from HP employees throughout the competition. In 2012, more than 22,000 students participated from 13 countries and more than 220 HP employees volunteered as facilitators, mentors, and judges. A team of students from South Africa won the 2012 competition with a concept for a solar-powered lamp to replace traditional kerosene lamps used during power outages and in locations without municipal electricity. Kerosene lamps create indoor air pollution and are damaging to health.









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IBM knows that a smarter planet begins with smarter education. Educating children is a top priority in every community. As part of IBM's commitment to innovation and leadership, the company's STEM-focused educational programs are designed to inspire, prepare, and support children, young adults, and teachers. Our portfolio of educational initiatives continues to evolve and grow to help strengthen teacher instruction and better meet the learning needs of students. Through innovative programs such as Transition to Teaching, the IBM KidSmart Early Learning Program, and our P-TECH 9-14 school model, IBM is working to raise student achievement and enhance academic productivity, especially in the STEM disciplines.

## Initiatives

### Early Education

#### ► KidSmart Early Learning Program Worldwide

This program enriches the pre-kindergarten curriculum with interactive teaching and learning activities using the latest technology. IBM's KidSmart program features Young Explorer™, a computer housed in brightly colored, kid-friendly Little Tikes™ furniture and equipped with award-winning educational software to help children learn and explore concepts in math, science and language. The computer centers can also help children learn important socialization skills such as working together and sharing. Exploration and socialization skills are important to prepare children for future success in school, and help level the playing field and ensure all children have access to educational tools. Since the inception of the KidSmart Early Learning Program in 1998, IBM has donated more than 64,000 Young Explorers to schools

and nonprofit organizations in 60 countries, reaching more than 110,000 teachers and serving more than 10 million students.

### Teacher Training

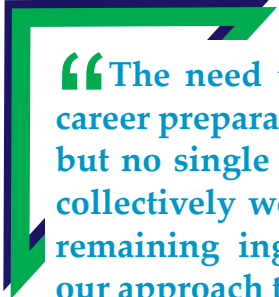
#### ► Teachers TryScience Worldwide

IBM understands that preparing the next generation of innovators requires great science teachers with the skills and knowledge to educate, inspire, and motivate students. But the demand for science teachers continues to outstrip the supply; in the United States, about one-third of all middle school science teachers are not certified to teach science. The challenge is providing teachers with the resources they need to strengthen their instruction and better prepare students for the jobs of the 21st century, many of which will increasingly be in STEM fields.

Through Teachers TryScience, teachers at all levels are able to improve their instruction with hands on, project-based lessons, with a focus on engineering and design. To help them effectively implement lessons in the classroom, teachers can find free and engaging standards-based lessons that are integrated with online professional development resources. Teachers TryScience also provides social networking tools to enable educators to comment on and rate the lessons and professional development resources; submit teaching materials; and engage in focused discussions on relevant topics. Now that Next Generation Science Standards have been released, many of the lessons will be mapped to them. Another new project with the National Board for Professional Teaching Standards has provided annotated videos of high quality instruction of a number of the lessons on the site.

#### ► Transition to Teaching Nationwide

Transition to Teaching is an extension of IBM's work in education and community service. Since 2006, IBM has supported those employees who want to begin second careers as fully accredited teachers in STEM subjects in their local communities.



**“The need to integrate academic work and career preparation has never been more urgent, but no single entity can do it alone. Now that collectively we have a proven recipe, the only remaining ingredient for positive change in our approach to education on the national level is our desire to succeed.”**

Stanley S. Litow  
Vice President of Corporate  
Citizenship & Responsibility

Transition to Teaching provides employees with guidance and funding to help them transition into teaching as their next career move, while still working at IBM.

Acknowledging that a shift in vocation takes time and training, the Transition to Teaching initiative helps underwrite the costs while employees pursue the education and training experiences required for teacher certification -- combining traditional coursework, online courses, and practice teaching. IBM is reimbursing participants up to \$15,000 for tuition and stipends while they student teach. Today, approximately 100 IBM employees are participating in the Transition to Teaching program, and 32 graduates have already completed their teacher certification and are teaching in classrooms or teaching online courses in the United States.

## Workforce Training

#### ► P-TECH / Grades 9-14 School Model New York and Chicago

The P-TECH / grades 9-14 school model enables students to graduate with high school and an associate's degree that will enable them to secure an entry-level position in the highly competitive field of information technology or to complete their studies in a four-year higher education institution. The first school, Pathways in Technology Early College High School (P-TECH), an innovative public school spanning grades 9-14, launched in Brooklyn, N.Y., in September 2011, through a partnership between the New York City Department of Education, the City University of New York, New York City College of Technology and IBM. As of May 2013, 74 (62 sophomores and 12 freshmen) of the 227 students are enrolled in at least

one of eight college courses.

The first replication of the grades 9-14 school model began in the fall of 2012 in Chicago, Ill., as IBM helped create four schools. IBM serves as the lead industry partner for one of these new schools -- the Sarah E. Goode STEM Academy, a partnership with Chicago Public Schools, City Colleges of Chicago, and Richard J. Daley College. IBM's commitment includes skills mapping, mentors, internships, industry consortia, and jobs.



The broader goal of the program is to apply the knowledge and experiences from these schools to serve as a model for education nationally. IBM has released a "playbook" designed to outline how to develop an innovative grades 9-14 school to prepare graduates for a variety of industries, i.e., health care, advanced manufacturing, and hospitality, that require technology skills. There are plans to replicate the model in New York State, Idaho and elsewhere.

#### ► Reading Companion Worldwide

Reading Companion is IBM's interactive Web-based technology that is helping children and adults learn to read. Reading Companion uses innovative speech-recognition technology that "listens" and provides individualized feedback to the user, enabling emerging readers to practice their pronunciation as they acquire fundamental English reading skills. For adults, the software allows them to gain literacy skills while reading content that is relevant to them. Forty-nine countries are currently taking advantage of IBM's Reading Companion to help 121,000 people in 2,700 schools and nonprofit organizations learn to read in English.

#### ► SME Toolkit Worldwide

In partnership with the International Finance Corporation, IBM has co-developed the SME Toolkit. This is a free set of interactive tools and educational resources available online and via cellphones to help small businesses implement sound business management practices, such as handling accounting tasks, legal issues, hiring employees, gaining access to finance, marketing products and services, and entering new markets. The tool is particularly helpful to women, minority, and veteran-owned businesses. SME Toolkit was launched in 2002 and is available in 32 countries and 18 languages. Its various websites worldwide receive a combined 5 million unique visitors annually. In many places it is the largest online business support resource in the local language. There are more than 60,000 users in the U.S.







Endowed with gifts from Micron Technology, Inc., the Micron Foundation's mission is to develop effective programs that promote math, science, and engineering education; and to participate in activities that address the priorities and concerns of the communities where Micron employees live and work. Outreach, grants, innovation, and collaboration are key elements in reaching our goals. The Micron Foundation funds education and community grants in specific program areas in communities where Micron has manufacturing facilities.

## Initiatives

### Teacher Training

#### ► Idaho

During the 2011-2012 school year, the Micron Foundation and Micron supported 1,466 teachers/counselors and more than 50 faculty members through our research grants and university program support.

#### ► I-STEM

##### Idaho

I-STEM is a coordinated statewide effort by the Idaho State Department of Education, Idaho Professional-Technical Education, educators, businesses, and industry to support STEM in grades K-12.

#### ► VISTA

##### Virginia

The Virginia Initiative for Science Teaching and Achievement (VISTA) is a statewide partnership among 60+ Virginia school districts, six Virginia universities, and the Virginia Department of Education. Its goal is to translate research-based best teaching

practices into improved science teaching and student learning for all students at all levels.

### Primary and Secondary Education

#### ► Virginia and Idaho

During the 2011-2012 school year, the Micron Foundation and Micron supported 647 events at 125 schools, impacting the lives of 523,529 students. Partnerships and initiatives include:

- **Chantilly Academy, Virginia:** pre-collegiate engineering program
- **Equal Footing Foundation, Virginia:** philanthropic arm of the Northern Virginia Technology Council
- **Systemic Solutions, Virginia:** building a future pipeline for STEM education
- **Chip Camp, Boise, Idaho:** specialized camp for 7th and 8th grade students for STEM education

- **Hands on Science Lessons, Boise, Idaho**
- **Girls Going Tech, Boise, Idaho**
- **Math Meets, Boise, Idaho**
- **Micron Challenge, Manassas, Virginia**

## Higher Education

► Idaho, Virginia, California, Utah, Washington

Micron and the Micron Foundation have partnered with the University of Idaho for STEM research; Virginia Tech to support semiconductor classes; Boise State University for MSE program support; University of California, Davis to support the college of engineering; Utah State University to support the Micron Research Center; University of Utah to support a Nanofab facility; University of Washington for a math academy; and Brigham Young University to support student research.







Microsoft

With investments worldwide and across the United States, Microsoft is working to ensure that students are empowered with 21st century skills as a key foundation for economic growth. We are committed to extending the reach of high-quality education to all by focusing our innovation on enabling relevant, personalized learning for students and giving educators creative tools, greater insight, and more time. Microsoft offers a variety of programs to help educators connect with each other, prepare students for tomorrow's careers, and increase access to technology and training for learners in classrooms, on campuses, and in the larger community.

## Initiatives

### Teacher Training

#### ► Partners in Learning Worldwide

Partners in Learning (PiL) is a global initiative designed to actively increase access to technology and improve its use in learning. PiL's goal is to help schools gain better access to technology, foster innovative approaches to pedagogy, and teach professional development and provide education leaders with the tools to envision, implement, and manage change.

- **Innovative Teachers Program:** To help educators further their professional development and learn from and inspire one another, this program promotes the creation of exemplary practices, awards software grants, and gives educators access to online learning communities. The annual PiL Global Forum recognizes some of the world's most innovative

educators, who are selected from over 250,000 competitors from across the globe.

- **Partners in Learning Network:** The global PiL Network provides professional development training for teachers, community discussions, free software, step-by-step tutorials, and lesson plans. The PiL network is free for teachers and schools all over the world to use.
- **Innovative Schools:** Microsoft Innovative Schools helps school leaders discover and share best practices to foster a culture of innovation. In conjunction with other education experts from around the world, Innovative Schools develops new approaches and materials that any school or school system can use and the critical leadership development necessary to help students achieve their full potential.

- **Microsoft Innovative Educator Program:** These two-day seminars are designed for teacher trainers and those who are responsible for training educators on the integration of technology in the classroom. Teams from schools and districts develop teacher professional-development action plans, which can be used to train teachers on how to incorporate Microsoft technologies into teaching and learning.

► **Games for Learning Institute (G4LI)**  
Worldwide

The Games for Learning Institute (G4LI) is a first-of-its-kind, multi-disciplinary, multi-institutional gaming research alliance to build scientific evidence to support games as learning tools for math and science subjects among middle school students.

► **Technology Education and Literacy in Schools (TEALS)**  
Nationwide

Through TEALS, Microsoft recruits, mentors, and places high-tech professionals as part-time teachers in high schools unable to offer computer science courses on their own. This year, TEALS will place more than 120 volunteers in 37 high schools in eight states to teach computer science to more than 2,000 students.

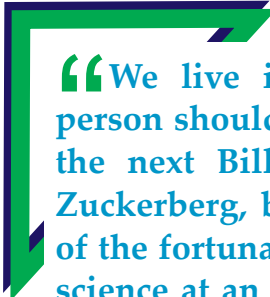
► **Microsoft IT Academy**  
Worldwide

The Microsoft IT Academy Program is a college- and career-ready education program available to all accredited academic institutions, designed to provide students with the 21st century technology skills necessary to acquire certification and be competitive in today's rapidly evolving

workplace. IT Academy offers more than 100 certifications for students to demonstrate high-level proficiency with commonly used Microsoft products.

► **KinectEDucation**  
Worldwide

KinectEDucation is an educator-driven resource for developers, teachers, students, enthusiasts, and any other education stakeholder to promote the use of Kinect applications in classrooms. The goal is to transform classrooms to a 21st-century model of learning with accessible technology.



**“We live in a country where any young person should have the opportunity to become the next Bill Gates or Steve Jobs or Mark Zuckerberg, but currently you have to be one of the fortunate few to be exposed to computer science at an early age. Computer science is to the 21st century what physics was to the 20th, but the number of high schools offering CS is shrinking, not growing.”**

Brad Smith  
General Counsel and  
Executive Vice President

## Higher Education

► **Faculty Connection**  
Worldwide

Featuring content and valuable tools that are exclusive, free, and designed to support technology educators, this site offers curriculum, free software, members-only forums, insight into Microsoft's latest initiatives, as well as access to regional events and training.

### ► Microsoft Students to Business Worldwide

By providing the curriculum and training necessary to help match students' skills with the needs of local businesses, the Students to Business (S2B) program connects Microsoft partners and customers with qualified students for entry-level and internship positions. S2B operates in more than 65 countries and has connected 15,000 students with jobs and internships as part of the Microsoft community.

### ► Microsoft Research Connections Worldwide

Microsoft Research collaborates with the world's top academic and scientific researchers, institutions, and computer scientists to shape the future of computing. Our collaborations help us develop technologies to help solve some of the most urgent global challenges, and our fellowships and grants help foster the next generation of world-class scientists who are critical to the future of scientific discovery.

## Primary and Secondary Education

### ► Microsoft YouthSpark Worldwide

Through partnerships with governments, nonprofits, and businesses, Microsoft's YouthSpark initiative aims to empower 300 million youth during the next three years to imagine and realize their potential by connecting them with greater educational, employment, and entrepreneurship opportunities. In the U.S., the majority of YouthSpark's nonprofit cash grants are focused on five national nonprofit partners: Boys & Girls Clubs of America, City Year, Junior Achievement, the Network for Teaching Entrepreneurship (NFTE), and Year Up.

### ► YouthSpark Programs

- **DigiGirzl:** DigiGirzl, a YouthSpark program, gives high school girls the opportunity to learn about careers in

technology, connect with Microsoft employees, and participate in hands-on computer and technology workshops.

- **Minority Student Day:** Hosted by the Blacks at Microsoft (BAM) professional network, Minority Student Day offers a STEM career day exposure program for underrepresented youth in high school. The program provides two \$5,000 scholarships for students going on to major in STEM in college, and is renewable annually with a 3.0 GPA.
- **Give for Youth:** Give for Youth is a micro-giving portal designed to help you fund and follow the dreams of young people around the world. With your donation, young people can connect with greater opportunities for education, employment, and entrepreneurship.
- **Microsoft DreamSpark:** DreamSpark allows current university or high school students to download professional Microsoft developer, designer, and gaming software at no charge.
- **Microsoft Imagine Cup:** The Imagine Cup is the world's most prestigious student technology competition, bringing together student innovators from across the globe. With Microsoft resources and support, students bring their ideas for new apps, games, and social entrepreneurship to life.
- **Innovate for Good:** Microsoft Innovate for Good is a global community enabling youth to collaborate, inspire, and support each other while using technology to make a difference in their communities. Innovate for Good brings together youth from around the world in local events and in a global online community to provide support for their ideas on making a difference.



## Other Education Initiatives

### ► STEM Video Game Challenge Nationwide

Microsoft is proud to join PBS and Sesame Street in sponsoring the National STEM Video Game Challenge, a multi-year competition that aims to motivate interest in STEM learning among America's youth by tapping into students' natural passion for playing and making video games.

### ► Partnerships for Education Worldwide

Microsoft is a member of Partnerships for Education (PfE), a joint initiative of UNESCO and the World Economic Forum, which tries to harness public and private initiatives around the world to create partnerships and improve education outcomes.

### ► @Microsoft Conversations on Education Washington, D.C.

The Microsoft Innovation & Policy Center in downtown Washington, D.C. hosts @Microsoft Conversations on Education, a series of panel discussions and roundtables that bring together policy experts, thought leaders, and community stakeholders to address solutions for improving quality and access in STEM education.







NCR Corporation is a global technology company committed to partnering with the community to help develop the leaders and technologists of tomorrow. We are actively investing in nonprofit organizations and programs focused on innovative approaches and solutions that “help people to help themselves” in the communities in which our employees and customers live and work. We accomplish this by volunteering our time and talent, as well as awarding grants and making charitable donations to local and national organizations that engage and educate young people in science, technology, engineering, and math (STEM).

## Initiatives

### Primary and Secondary Education

#### ► GeorgiaFIRST Georgia

NCR is a proud sponsor, via grant and volunteer support, of GeorgiaFIRST (For Inspiration and Recognition of Science and Technology), a nonprofit with national ties dedicated to inspiring children to be excited and engaged in science, engineering, and technology. With about 4,500 students participating in its programs, GeorgiaFIRST helps students attend a Georgia school of higher learning, and upon graduation, stay in Georgia to contribute to an innovative workforce.

GeorgiaFIRST operates four distinct technical robotic programs, targeted at children from elementary through high school age. These programs engage younger students with real-world engineering by challenging them to build LEGO-based robots. For high school students, the FIRST Robotics Competition

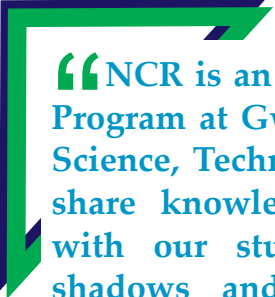
tasks them with building 120-pound robots from the ground up -- gaining valuable experience in design, programming, teamwork, and strategic thinking.

For more than seven years, NCR has supported the FIRST Robotics Regional Competition in Georgia for high school students with employee volunteers serving as judges, referees, mentors, and support personnel. High school teams throughout the region gather in Georgia each year to compete. In 2012, NCR also provided GeorgiaFIRST a \$25,000 grant.

#### ► Gwinnett School of Mathematics, Science and Technology Gwinnett County, Ga.

STEM-certified by the Georgia Department of Education, Gwinnett School of Mathematics, Science and Technology is a charter secondary school founded in 2007 to nurture the high potential of students in the areas of bioscience, engineering,

and emerging technologies (pictured on page 77). NCR offers product engineering internships and mentoring opportunities to support the Junior Fellowship Experience and Senior Capstone Experience programs. Additionally, 20+ students participate in a Shadow Day in our corporate office, touring our facilities, seeing solutions at work and meeting with executives and employees. NCR also is a member of the Advisory Board for Curriculum, providing guidance on the technologies and skills that are important to the technologists of tomorrow.



**“NCR is an integral part of the Partnership Program at Gwinnett School of Mathematics, Science, Technology (GSMST) in which they share knowledge and relevant experiences with our students through speakers, job shadows and internship mentors. NCR’s continual support of GSMST’s programs makes the shared experiences we have created together much more than a partnership, it is a relationship that allows students to benefit from the insight and relevance that only a major corporation like NCR can offer.”**

Dr. Jeffrey Mathews,  
Principal of GSMST

#### ► Junior Achievement of Arkansas Arkansas

Junior Achievement (JA) of Arkansas provides young people the knowledge and skills needed to own their economic success, plan for their future, and make smart academic and economic choices. NCR employee volunteers present JA Success Skills®, a seven-week course designed to help high school students understand and learn the skills necessary to pursue a career.

Team-building and individual exercises teach the students problem-solving, critical-thinking, and communication skills, essential to success in technology careers.

## Higher Education

#### ► Georgia Institute of Technology Georgia

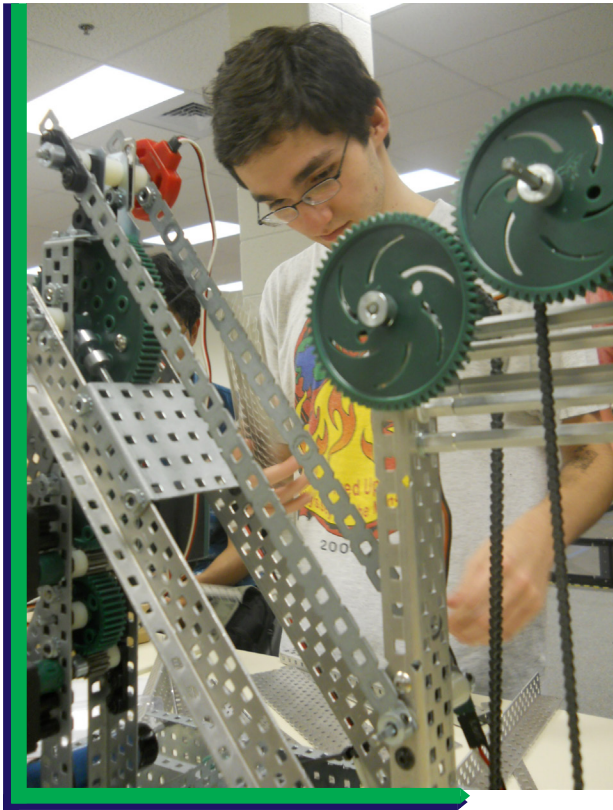
NCR Vice President and CIO Bill VanCuren serves on the Georgia Tech College of Engineering Advisory Board. Comprised of local business leaders and graduates, the Board reviews curriculum and technology trends in the business world, and advises how to apply these trends in education.

Additionally, NCR has long supported Georgia Tech’s efforts to educate tomorrow’s technologists by:

- Sponsoring and judging the InVenture Prize, an innovation competition for undergraduate students, and the Capstone Design Expo, a competition where students design, build, and test machines that solve real-world problems
- Funding targeted, STEM-related faculty and post-graduate research projects and research fellowships at leading technology schools around the world, including Georgia Tech’s College of Electrical & Computer Engineering

#### ► Gwinnett Technical College Gwinnett County, Ga.

NCR actively partners with Gwinnett Technical College to place students in internships and mentoring opportunities focused on technology. Additionally, an NCR employee



serves on the college's CIS Advisory Board to provide feedback on technology industry trends that could impact curriculum.

► **University of Georgia and Terry College of Business**  
Athens

NCR has close ties to the University of Georgia (UGA) undergraduate and graduate programs, including the Terry College of Business. NCR Vice President and

CIO Bill VanCuren serves on the Department of Management Information Systems (MIS) Advisory Board. The Board, which is comprised of alumni, current students, and business leaders, helps ensure that the MIS curriculum meets the needs of employers, supports cutting-edge research, provides speakers for classes, and funds scholarships. Additionally, NCR has funded scholarships for UGA MIS students and sponsored targeted, STEM-related faculty and post-graduate research projects and research fellowships.

## Workforce Training

► **U.S. Department of Veterans Affairs**  
Nationwide

NCR actively recruits at VA-sponsored job fairs designed to place recently separated military personnel returning to civilian life into technical and administrative roles.





## ORACLE®

The technology industry is critical to global progress and prosperity, and Oracle's corporate citizenship initiatives are grounded in our technology leadership. We are committed to using our resources to increase opportunity, protect the environment, advance education, and enrich community life. We are proud that the same innovative spirit behind Oracle's technological success also drives innovative solutions and programs that benefit communities around the world.

Oracle has leveraged its technology leadership to advance education for nearly 20 years. In 2012, we achieved a new milestone -- our technology education programs now reach more than two million students annually. Through the Oracle Academy, we grant Oracle software to secondary schools, colleges, and universities in 97 countries. Educators use our products, in combination with the curriculum, Oracle Press books, lectures, certification preparation, and community resources we provide, to equip students with the technical skills they need to enter the global workforce prepared to succeed.

In the United States in 2012, Oracle supported more than 141,000 students in more than 800 schools through its Oracle Academy program.

## Initiatives

### Secondary and Higher Education

#### ► Oracle Academy Worldwide

The Oracle Academy partners with 6,000+ educational institutions worldwide to help more than 1.9 million secondary and post-secondary students gain industry-relevant skills prior to entering the workforce. Few subjects will open as many doors for students in the 21st century as computer science (CS) and engineering. To help educators awaken and deepen students' interest in these important fields of study, the Oracle Academy makes available CS education resources that are up-to-date, industry-

relevant, engaging, and valued at more than \$2.7 billion annually.

#### Technology

- **Hosted Lab Environments**  
For students interested in learning how to design a database or program in SQL or PL/SQL, the Oracle Academy provides Oracle Application Express as a hosted practice environment.
- **Java Development Environments**  
As the steward of Java, Oracle contributes to several Java development environments (JDEs), including Alice, Greenfoot, BlueJ, Eclipse, and NetBeans.



Students and faculty may access these JDEs to learn Java, the development platform used by more than 9 million developers worldwide.

## Curriculum

- **Courseware**  
Professionally developed courseware is a core component of the instructional support offered by the Oracle Academy. Our courses are modular and aligned to Oracle certification; regional, national and state standards; Association for Computing Machinery (ACM) standards; and the U.S. Advanced Placement Computer Science A exam.
- **Oracle Press Books**  
Published by McGraw-Hill and used by millions of Oracle professionals worldwide, Oracle Press books cover a variety of Oracle and Java-related subjects. The Oracle Academy grants faculty and students a 50 percent discount on Oracle Press books and e-books.
- **Technical Articles**  
Oracle Magazine and Java Magazine offer educators and CS students who want to learn more about Oracle and Java technologies easy access to technical articles. Profit magazine helps educators and business students deepen their understanding of how Oracle technology is used to streamline business operations, increase efficiency, and reduce costs.
- **Oracle Learning Library**  
Faculty and students can access free online learning content – videos, tutorials, articles, demos, task-specific step-by-step instructions, and more – from the Oracle Learning Library.

## Training

- **Faculty Professional Development**

To help educators successfully adopt Oracle Academy curriculum, we provide extensive training opportunities. Faculty may attend Oracle Academy training events at no cost. They also receive a 50 percent discount on hundreds of Oracle University courses.

## Certification

- **Certification Preparation and Exams**  
Oracle Academy faculty and students receive substantial discounts on Oracle certification preparation products and exams. These resources help them earn a valuable distinction recognized throughout the IT industry – Oracle certification.

## Community

- **Computer Science Clubs**  
If students form CS clubs that emphasize Oracle, Java, or women in CS, the Oracle Academy supports them with Oracle club advisors and guest lecturers.
- **Faculty Lounge and Student Center**  
We help educators and students connect with the Java developer network through java.net, engage with Oracle's global user groups through the Oracle Technology Network, and access postings of internships and jobs available at Oracle.
- **Oracle OpenWorld and JavaOne**  
Oracle Academy faculty and students are invited to attend Oracle OpenWorld and JavaOne. These international conferences offer informative technical sessions and opportunities to meet Oracle employees, customers, partners, and Java developers and enthusiasts.

## ► Oracle Education Foundation Worldwide

The Oracle Education Foundation (OEF) is a nonprofit organization funded by Oracle. Since 1998, Oracle and OEF have offered

ThinkQuest, a comprehensive online learning platform, to primary and secondary schools globally. In 2012, ThinkQuest supported 559,000 students in 65 countries to develop their technology skills.

## Other Education Initiatives

### ► Scholarship Programs Nationwide

Oracle has partnered with organizations to provide STEM scholarships to deserving students who attend accredited colleges and universities to support their goals to achieve higher education.

- American Indian Science and Engineering Society Scholarship
- National Society of Black Engineers Scholarship
- Great Minds in STEM Scholarship
- National Coalition of 100 Black Women, Oakland Scholarship
- Society of Women Engineers Scholarship
- Hispanic Scholarship Fund
- Congressional Hispanic Caucus Institute Scholarship
- Black Data Processing Associates Scholarship
- Summer Academy for Advancing Deaf and Hard of Hearing in Computing Scholarship
- Greene Scholars Program Scholarship

### ► Grants Nationwide

Oracle's giving centers on science,

technology, engineering, and math (STEM) education and other organizations with which we volunteer, help to improve the quality of life in communities where our employees live and work. Some of the organizations and programs that received Oracle grants in 2011 and 2012 include the California Academy of Sciences, California STEM Learning Network, Level Playing Field Institute, MOUSE Squad of California, the New Teacher Center, and the Tech Museum of Innovation.

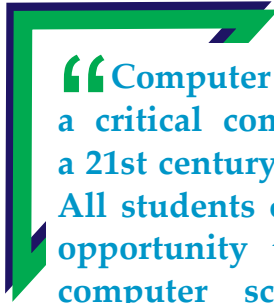
### ► Alice Worldwide

Alice is a free platform from Carnegie Mellon University designed to awaken students' interest in computer programming. Oracle funds the continued development of Alice, which introduces students -- ages 8-22 -- to object-oriented programming in a manner that emphasizes storytelling. Downloaded more than 1 million times a year, Alice is used by thousands of

schools globally and has been adopted by 19 percent of U.S. colleges and universities.

### ► Greenfoot Worldwide

Greenfoot is a Java development environment designed to help beginners transition from drag-and-drop environments like Alice into pure Java. Developed at the University of Kent and LaTrobe University, Greenfoot emphasizes visualization tools that ease the transition into more advanced Java tools such as BlueJ, NetBeans, and Eclipse. Greenfoot serves students age 14 and up, and engages more than 350,000 new users annually.



**“Computer science is a critical component of a 21st century education. All students deserve the opportunity to develop computer science and engineering skills to help them become the leaders, innovators, scientists and entrepreneurs of tomorrow.”**

Alison Derbenwick Miller,  
Vice President,  
Oracle Academy

► Khan Academy  
Worldwide

This online learning platform helps students of all ages master core academic subjects, including math and science. Oracle support helps make available free, self-paced education, accessible to anyone with an internet connection. The Khan Academy website offers video lessons, practice exercises, assessments, personalized progress maps for students, and analytics for teachers.

► San Mateo County Office of Education  
San Mateo County, Calif.

Oracle funded the completion of a new, state-of-the-art STEM Center that provides research-based STEM professional development for educators. The Center is evolving into one of California's premier teacher training facilities.

► Lawrence Hall of Science  
Berkeley

This internationally renowned science museum is also a center for research, curriculum development, and teacher professional development. With support from Oracle, the Hall created KidzScience, an after-school program consisting of four, hands-on science kits that map to primary school science standards. More than 45,000 students globally benefit from the KidzScience curriculum.







# Qualcomm

[www.qualcomm.com](http://www.qualcomm.com)



Qualcomm strives to prepare today's students for the demands of tomorrow. We look for ways where we can make measurable, meaningful change, and we bring our breadth of resources – human, financial, and technical – to the service of these projects.

Qualcomm supports programs across the educational continuum: training for K-12 math and science teachers; curriculum development; transformational change for public schools; collaboration between the tech sector and university-level instruction; one-to-one programs using wireless technology; and aligning resources for students to explore careers in engineering.

## Initiatives

Qualcomm's support for programs at the K-12 grade level is premised on our belief that early student achievement is critical for the development of our future tech workforce. We target three focus areas within math and science education: teacher professional development; student success; and systemic transformation. Qualcomm is also engaged in the area of arts education.

### Primary and Secondary Education

#### ► Encorps California

Qualcomm has supported this program since 2008, which is dedicated to increasing math and science teachers in California's public middle and high schools. Encorps transitions retired corporate professionals into education careers.

Qualcomm supports a broad range of classroom and after-school programs that

directly impact student achievement in math and science. Some of our key partners include: Elementary Institute of Science, San Diego Science Alliance, and Barrio Logan College Institute.

#### ► FIRST Robotics San Diego

Qualcomm co-sponsors the San Diego Regional FIRST Robotics Competition -- an exciting competition that brings professionals and high school student teams together to solve an engineering design problem in an intense, competitive way. Qualcomm employees volunteer as student team mentors to help build a robot from design to completion, as well as volunteering as competition judges, robot inspectors, and scorekeepers.

Qualcomm Career Experience High School students visit Qualcomm's corporate headquarters to learn first-hand about life as

an engineer. Employee volunteers share their experiences, career paths, and inspirations.

## Low-Income and Underserved Communities

### ► Access to Engineering Nationwide

Qualcomm strives to increase exposure to STEM curriculum to under-represented populations, and partners with organizations to provide access for women and minorities to career paths in the high-tech world. These include: National Action Council on Minorities in Engineering, Tech Trek, Girls MATTER, Society of Hispanic Engineers, San Diego MESA, National Society of Black Engineers, San Diego MANA, and the Society of Women Engineers.

### ► Wireless Reach Worldwide

Qualcomm's Wireless Reach initiative supports programs and solutions that bring the benefits of connectivity to underserved communities. Wireless Reach believes the use of always on, always connected mobile devices in the hands of K-12 students can dramatically improve educational outcomes by providing unprecedented access to learning resources and the ability to collaborate with peers and advisors in and out of the classroom. In addition to delivering customized curriculum and assessment, enabling collaborative learning,

and empowering mentoring and social engagement, the presence of a mobile wireless device in the hands of each student provides transformative advantages. Qualcomm's Wireless Reach initiative is supporting eight U.S. pilots to explore ways to overcome barriers to implementation.

For example, Harvard University's Graduate School of Education teamed with Qualcomm Wireless Reach to develop unique, custom-designed, educational Augmented Reality Experiences (ARE) using 3G-connected mobile devices. The project, called EcoMobile, incorporates AREs using Qualcomm's vision-recognition technology to teach middle school students in the northeastern United States about ecosystems by adding visual overlays, supplemental information, and just-in-time feedback to their field trip experience. Significant learning gains were seen on the content survey results, with students' scores increasing by an average of 19 percent from the pre to post survey. The results of the student opinion and content surveys support the idea that the smartphones sustained high levels of student engagement.

### ► Project K-Nect North Carolina

Project K-Nect is a pilot program that began during the 2007-2008 school year to discover if 24/7 connected smartphones and tablets could enhance student engagement and learning. The project addressed the need to improve math skills among at-risk North Carolina students who scored poorly in math and did not have Internet access at home. Students discovered creative ways to use the phones and the 24/7 Internet connectivity to increase their understanding of Algebra I, especially with social networking tools.

The 2010 Evaluation Report found that 85 percent of students felt more successful in math and more than 50 percent are thinking of a career in the math field as a result of participating in Project K-Nect.











At Symantec, we recognize the growing need for STEM talent in order to compete in the global economy and we believe there is an additional imperative to support STEM careers for women and minorities.

Symantec continues to strategically focus its community investment programs and employee engagement opportunities around four core focus areas of which STEM and diversity together account for 62 percent of FY12 giving alone. Since this last report in 2010, Symantec Corporation and the Symantec Foundation have provided more than \$4 million in support of STEM education and diversity initiatives in the United States.

Symantec believes all students should have equal access to a quality education. We also want to encourage more students to pursue careers in math and science, and in particular support women and minorities who are interested in science, technology, engineering, and mathematics.

In addition to providing grants, scholarships, and sponsorships, we encourage our employees to engage in STEM education through volunteerism. Many employees dedicate their time and talents to organizations working to prepare young people for the innovation economy.

## Initiatives

### Low-Income and Underserved Communities

#### Teach for America

##### ► Nationwide

Teach For America (TFA) is growing the movement of leaders who work to ensure that kids growing up in poverty get an excellent education. Our partnership with TFA is focused on recruiting and developing a cohort of STEM teachers to provide exceptional education to students in under-resourced schools. Through professional development and comprehensive support, these TFA corps members deliver an

education which elicits a high focus on inquiry and exploring, enabling students to become problem solvers.

The goals of this program are two-fold. One goal is to increase the number of STEM corps members, thus building a pipeline of prepared teachers; the second is to help low-income children reach their fullest academic potential.

Through this partnership, we have reached more than 115,000 children. Recent research

has proved that corps members are having a greater impact on student achievement in middle & high school math and science than traditionally prepared teachers. For instance, approximately 80 percent of the 2012 Los Angeles corps members achieved more than one year's worth of academic growth for students.

Since one of the primary factors keeping potential corps members from joining is financial concerns, including high undergraduate debt, Symantec has also partnered with TFA to provide transitional funding to every incoming math or science corps member who demonstrates need.

#### Level Playing Field Institute's SMASH Program California

SMASH is a free three-year, five-week summer math and science enrichment ► program for high-achieving, low-income students of color offered through Level Playing Field. This organization works to eliminate and remove barriers faced by underrepresented youth interested in STEM careers through education and research.

## Workforce Training

► NPower  
New York and Dallas  
NPower aims to bring the IT community

together to do social good and offers its services through two core programs designed for optimal impact on communities in need: Technology Service Corps (TSC), a free, sector-based IT workforce development program that responds to the needs of underserved, low-income youth

and young adults and The Community Corps (TCC), an online skilled volunteer portal matching and connecting corporate IT employees with nonprofits and schools to address a variety of common but critical IT requests at no cost.

Through our partnership with NPower, we seek to bolster the TCC program by increasing the number of registered volunteers by 50 percent, increasing the number of nonprofits engaged by more than 50 percent, and matching volunteers with more than 600 meaningful projects. Additionally,

we will grow the TSC program in New York and support the launch of the Dallas TSC program. Finally, we are supporting the launch of NPowering Women, a program designed to engage young women in the field of IT services and help ensure their long-term success as professionals.

## Primary and Secondary Education

► Science Buddies  
Nationwide  
Science Buddies' mission is to help students



**“As a technology company, Symantec’s success depends not only on recruiting and hiring the right people, but also on ensuring we foster the necessary skills in the upcoming workforce. Investing in the next generation of innovators is good for our business, for the nation, and for the global economy.”**

Cecily Joseph,  
Senior Director,  
Corporate Responsibility  
and Compliance

from all walks of life to build their literacy in science and technology so they can become productive and engaged citizens in the 21st century.

Symantec sponsors Science Buddies online computer science resources which teach and inspire students to become the next generation of high skilled workers in STEM fields, primarily through participation in science fairs and competitions. With Symantec's support, Science Buddies has developed science fair projects and tools specifically appealing to girls and focusing on topics such as Green IT.

Most recently, Symantec is supporting the development of robotics projects as well as a "Laboratory Notebook" app which allows students to input their own data, observations and conclusions. In addition to reaching more than 625,000 students per year, Science Buddies reaches out to hundreds of educators per year, providing technical assistance and support services.

#### ► Silicon Valley Students Recycling Used Technology (StRUT) California

Students involved in StRUT evaluate, repair, and refurbish donated computers and in turn distribute those computers free to local schools. These students gain valuable computer knowledge and hands-on computer skills. The Silicon Valley chapter currently serves 20 elementary, middle, and high schools, and has placed over 500 free computers, printers, and networking devices with area schools. In addition to donating equipment and supporting StRUT financially, Symantec has hosted StRUT interns on-campus to further hone their technical skills.

#### ► MOUSE Squad Nationwide

MOUSE Squad supports students in establishing and managing leading edge technical support help desks in their schools. Their programs improve a school's ability to

use technology to enhance learning, while also providing a powerful, hands-on 21st century learning experience for students.

#### ► Hopeworks N' Camden Camden

Hopeworks provides at-risk kids with technology training in a safe, respectful, and celebratory atmosphere. They train these youth in state-of-the art computer applications including website design, computer networking and repair, and GIS, making the learning fun and enjoyable.

### Other Education Initiatives

#### ► Change the Equation Nationwide

Change the Equation (CTEq) is mobilizing the business community to improve the quality of STEM learning in the United States. Since its launch in September 2010, CTEq has helped its more than 100 members connect and align their philanthropic and advocacy efforts. The organization's coalition of members strives to sustain a national movement to improve PreK-12 STEM learning by leveraging and expanding its work in three goal areas:

- Improving philanthropy and increasing impact by emphasizing high quality, scalable programs;
- Inspiring youth and giving them a solid foundation in STEM and insight into the unlimited postsecondary and career options;
- Advocating change and promoting proven state policies and research-based practices that enhance student mastery of and interest in STEM disciplines.





Teradata is the world's leading analytic data solutions company focused on integrated data warehousing, big data analytics, and business applications that provide actionable business intelligence. It's our passion and it's all we do. We deliver award-winning, integrated, purpose-built platforms based on the most powerful, scalable, and reliable technology platform in the industry.

We believe that developing student interest in technology subjects will lead to not only a stronger workforce but a better world as well. That's why Teradata Cares provides grants for initiatives consistent with our company focus on science, technology, engineering and mathematics (STEM). In addition, Teradata Cares creates opportunities for employees to engage with their local communities in three key areas:

- Improving education to help tomorrow's technologists and business leaders understand the possibilities that technology provides
- Strengthening neighborhoods and communities
- Helping the environment and supporting corporate sustainability

Interest among youth today in science and technology is diminishing. Teradata Cares is dedicated to countering this trend by nurturing and developing young people's interest and education in the STEM disciplines. In addition to preparing today's youth for life in the modern world, this approach also develops our industry's future technologists and business leaders. Around the globe, our support of STEM initiatives includes local science fairs, science, and technology programs, Girls in IT programs, and mentoring programs.

## Initiatives

### Primary and Secondary Education

#### ► FIRST Robotics

Ohio, California, and Georgia

Teradata supports students in elementary, middle, and high school in STEM programs through our partnerships with FIRST, For Inspiration and Recognition in Science and Technology. More than 30 teams are supported at the high school level.

Additional support includes sponsorship of state and local regionals in Ohio, California, and Georgia. Annually, ten scholarships are awarded to high school seniors on our sponsored teams.

## Higher Education

### ► Teradata University Network -- The Premier Data Analytics Teaching Portal Worldwide

Mastering the challenges of tomorrow's dynamic data warehousing and IT environments will require a combination of technical expertise and practical, hands-on training -- and that's exactly what students experience at Teradata University Network (TUN).

The academic board that drives this unique teaching portal is composed of leading practitioners and renowned academics recruited from around the world, united by their dedication to sharing innovative, proactive applications of authentic technology for data-driven decisions.

Our goal is to train students to be breakthrough thinkers and doers who use data warehousing to create business value.

TUN gives students a taste of corporate reality. Via the companion Teradata Student Network website, professors design assignments using databases with millions of records -- all without the issue of scale. TUN also provides students with resources that would normally be prohibitively expensive for a university to develop and maintain, thereby creating opportunities to learn realistic business intelligence using Teradata data warehousing technology.

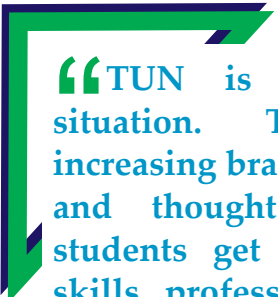
TUN students enter the working world with the caliber of knowledge and experience

that makes them desirable additions to any enterprise engaged in data warehousing and business intelligence. Moreover, they'll be exposed to cutting-edge architectural innovations in the areas of scalability, usability, and advanced functionality for database management with the enterprise data warehouse.

## Low-Income and Underserved Communities / Women in STEM

### ► Women of Teradata Nationwide

Women of Teradata provides scholarships to low-income females pursuing careers in STEM fields. The program enhances women's careers, understanding, knowledge, and personal growth. Each chapter creates and hosts events to build inclusion and for professional development and advancement.



**“TUN is a win-win, situation. Teradata is increasing brand awareness and thought leadership, students get leading-edge skills, professors are more effective and employers receive skilled recruits.”**

Barb Wixom  
Program Director,  
McIntire School of  
Commerce,  
University of Virginia









For more than 80 years, Texas Instruments has used increasingly complex technology to change the world. Today, TI's semiconductor innovations help more than 100,000 customers unlock the possibilities for a smarter, safer, greener, healthier, and more enjoyable world.

But, innovation is not just part of our history. It is the key to our future. At TI, we are committed to creating an ecosystem that drives innovation through our support of K-12 and higher education. TI and the TI Foundation have given more than \$150 million over the past five years to support education, including university research and STEM education. Higher education has received more than 80 percent of this investment, with approximately 70 percent of that funding focused on research. In addition, employee volunteer hours, equipment donations and in-kind contributions significantly extend the impact of this commitment. In 2012, 21 percent of these funds supported K-12 initiatives for students and teachers.

Our top philanthropic priority is the positive transformation of the K-12 public education system within the communities where we live and work. In the U.S. our focus is science, technology, engineering, and math (STEM), and we especially work to increase these skills among under-resourced communities, minority students, and girls. We also support increased access to education in TI site communities around the world.

## Initiatives

TI supports STEM education by:

- **Collaborating with effective partners to help meet or exceed education milestones in our immediate communities and build the pipeline of STEM-capable U.S. students.** For example, in North Texas we work within public-private partnerships like Commit!, the Metroplex Technology Business Council, and local chambers of commerce on a number of education initiatives, as well as with United Way and other nonprofits impacting education in
- **Leading and influencing positive change by actively advocating at the local, state, and national levels in the U.S. for legislation to improve STEM education, assessment, and accountability, as well as adoption of innovative education practices.** In addition to working with the Information Technology Industry Council, we engage with a number of groups with common goals, such as Change the Equation, the STEM Education Coalition, the Semiconductor

Industry Association, and others to make a greater collective impact.

- **Inspiring and motivating our employees to get directly involved in education as contributors, volunteers, mentors, tutors, and advocates.** In 2012, TI employees contributed almost 45,700 hours of their time, a 30 percent increase, valued at \$1 million, to community organizations. Also in 2012, TI also introduced a Volunteer Incentive Program (VIP) for TI employees and retirees, which matches contributions of 20+ hours with TI Foundation grants to nonprofit organizations. The foundation also matches TI employees' and retirees' gifts to K-12 schools, colleges and universities and to arts and culture organizations of up to \$10,000 per category annually.
- **Encouraging the use of the latest technology to educate students more effectively.** TI helps bring innovation to STEM education through its TI's Education Technology and DLP™ products, including advanced graphing calculators, apps, and 3D classroom projectors.
- **And investing in proven programs that improve student achievement and develop and prepare more educators to teach the critical STEM subjects.**

## Primary and Secondary Education

### ▶ AP Incentive Program™ Nationwide

The TI Foundation supports the Advanced Placement Incentive Program™ (APIP), a national model of the National Math & Science Initiative, in which students are encouraged to take more rigorous, college-level course work in high school, and teachers are rewarded for teaching rigorous courses. In 2010, a three-year, \$1.5 million grant expanded the program to all 32 Dallas

ISD high schools and helped the district pass a milestone of 10,000 students. In 2011, a \$1.9 million grant extended the program to Mesquite, a suburban district.

### ▶ Lancaster ISD Lancaster

In 2012 the (TI) Foundation, Educate Texas, and Lancaster Independent School District (LISD) announced a \$4.8 million, four year initiative to integrate STEM education at all levels in the district over the next four years. The new "STEM District" model will transform the teaching of these subjects statewide to better prepare Texas students for post-secondary and workforce success.

### ▶ Perot Museum Dallas

The TI Foundation gave a multi-million-dollar grant to the Dallas Museum of Nature & Science for a TI Engineering and Innovation Hall in the new Perot Museum of Nature & Science. In its first three months, more than 250,000 visitors -- including 40,000 children -- toured the exhibit halls.

### ▶ Plano ISD Academy Plano

TI committed \$5 million to help launch a new Plano Independent School District (PISD) high school academy focused on STEM education. The district's collaborative approach to research and planning yielded a proposal for an academy that combines project-based learning with rigorous coursework and adds technical arts to a STEM curriculum. The academy will open in the fall of 2013.

### ▶ TI Power of STEM Education Initiative California and Maine

In November of 2011, TI announced its \$1 million "Power of STEM Education Initiative" that benefits four communities in California and Maine; Greenock, Scotland; and Melaka, Malaysia -- communities where National Semiconductor operated and TI now has a major presence. The grants aim

to increase teaching effectiveness and build student interest in math and science.

#### ► Robotics Competitions Nationwide

TI has been a longtime supporter of robotics competitions as an important means of generating excitement among middle and high school students for the STEM subjects. TI has contributed hundreds of thousands of dollars to Boosting Engineering, Science and Technology (BEST) Robotics, For Inspiration and Recognition of Science and Technology (FIRST) Robotics and VEX.

#### ► STEM Teaching Awards North Texas and California

Since 2007, the TI Foundation has given the TI Innovations in STEM Teaching Awards to more than 60 outstanding STEM middle and high school teachers in four North Texas school districts. Each principal-nominated honoree received a \$10,000 award (\$5,000 cash and \$5,000 for education technology and/or professional development).

TI also funds various teacher awards in California (California Teacher of the Year Program and The Santa Clara County Office of Education Teacher Recognition Event), as well as the new I ROCK MATH grants with the United Way of Metropolitan Dallas and the Grants for Innovative Teaching (GFIT) awards with Junior League of Dallas.

#### ► TI MathForward™ Nationwide

Launched in 2005 at a junior high in the Richardson, Texas, school district, TI Math Forward combines instruction, professional development, curriculum integration, and classroom technology to help middle and high school students build confidence and achievement in math. Today, it has grown to more than 40 schools across eight states to help thousands of middle and high school students.



#### ► Uplift Dallas, Texas

The TI Foundation has awarded three grants totaling \$920,000 to Uplift Education (a system of charter schools that serve educationally underserved students about 80 percent of whom are from low-income communities). The grants included a new Laureate Preparatory school near the Perot Museum and a state-of-the-art science lab.

## Teacher Training

### ► Laying the Foundation Texas

In 2009, the TI Foundation gave \$1.5 million to Laying the Foundation® for a three-year training program for teachers in 10 middle and junior high schools in the Dallas, Garland, and Richardson school districts to improve their strategies for teaching pre-AP-level coursework.

### ► Teach for America Texas

The TI Foundation granted \$750,000 to Teach For America from 2010-2012, to expand educational opportunities in math and science in North Texas public schools. The program recruits, trains, and supports top college graduates who commit to teach for two years in underserved public schools.

### ► Teachers Teaching with Technology (T3) Worldwide

TI's Education Technology business sponsors the T3 program which includes face-to-face and online professional development institutes for educators. Since 1986, T3 has reached more than 100,000 teachers worldwide.

## Higher Education

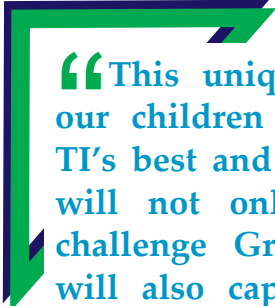
### ► UTeach North Texas

The TI Foundation has invested a total of \$2.85 million in UTeach through grants in 2009 and 2011 to the University of North Texas and the University of Texas at Dallas to expand existing UTeach programs and to the National Math & Science Initiative to create a new program at the University of Texas at Arlington. Combined, all three North Texas partner programs are anticipated to graduate more than 800 teachers who are projected to teach about 270,000 secondary math and science students by 2017.

## Low-Income and Underserved Communities

### ► Frank Greene Scholars Nationwide

Twenty-five African-American middle school students annually experience innovation firsthand by attending a Summer Science Institute at TI's Santa Clara site. In 2012 TI partnered with the Greene Scholars Program to offer the annual, hands-on learning event to create



**“This unique opportunity for our children to work alongside TI’s best and brightest engineers will not only motivate and challenge Greene Scholars, but will also capture the children’s imagination of possibility. As students practice science and engineering in collaborative and interactive ways, the subject matter becomes relevant and fun, sparking the beginning of a lifelong interest.”**

Gloria Whitaker Daniels,  
Program Director,  
Greene Scholars Program

excitement about STEM among the high-achieving 11- to 14-year-old scholars.

## Women in STEM

### ► Girl Scout STEM Patch

#### Texas

Last year, TI sponsored and helped launch the first ever “engineering patch” for Girl Scouts in kindergarten through 12th grade. The badge curriculum focuses on encouraging girls at every grade level to explore STEM education and careers. The badge has been available to all 35,000 Girl Scouts in Northeast Texas and has been a part of the program for the 4,400 underserved girls who experience Girl Scouts through the “Gift of Girl Scouting.”

### ► High-Tech High Heels

#### Dallas

TI supports High-Tech High Heels, a three-pronged gender equity approach that is designed to reduce math and science educator biases through training; dispel stereotypes through guidance counselor workshops; and increase girls' confidence via summer physics camps to increase enrollment and passing rates of female students in AP courses. The TI Foundation most recently invested \$413,000 in the High-Tech High Heels program through National Alliance for Partnerships in Equity Education Foundation (NAPE-EF). This and other summer camps help combat summer learning loss.

## Early Education

CA Technologies (36)

IBM (61)

## Higher Education

Applied Materials (25)

Autodesk (30)

Cognizant (41)

Ericsson (49)

Google (52)

HP (57, 55)

Micron (66)

Microsoft (70)

NCR (76)

Oracle (79)

Teradata (94)

Texas Instruments (100)

## Low-Income and Underserved Communities

Alcatel-Lucent (21)

Applied Materials (26)

Autodesk (31)

CA Technologies (35)

Cognizant (41)

EMC (42)

Ericsson (49)

## Low-Income and Underserved Communities (cont.)

HP (58)

Qualcomm (86)

Symantec (89)

Teradata (94)

Texas Instruments (100)

## Other Education Initiatives

Applied Materials (27)

Autodesk (31)

CA Technologies (36)

Cognizant (42)

EMC (47)

Google (53)

HP (59)

Microsoft (72)

Oracle (81)

Symantec (91)

## Primary and Secondary Education

Adobe (19)

Applied Materials (23)

Autodesk (29)

Cognizant (39)

EMC (45)

Google (51)



## Primary and Secondary Education (cont.)

HP (53)  
Micron (65)  
Microsoft (71)  
NCR (75)  
Oracle (79)  
Qualcomm (85)  
Symantec (90)  
Teradata (93)  
Texas Instruments (98)

## Teacher Training

Applied Materials (25)  
EMC (47)  
IBM (61)  
Micron (65)  
Microsoft (69)  
Texas Instruments (99)

## Women in STEM

Alcatel Lucent (21)  
Applied Materials (23)  
CA Technologies (34)  
EMC (46)  
Ericsson (49)  
Teradata (94)

## Women in STEM (cont.)

Texas Instruments (100)

## Workforce Training

Accenture (17)  
CA Technologies (33)  
Cognizant (41)  
HP (59)  
IBM (62)  
NCR (77)  
Symantec (90)







# About ITI

The Information Technology Industry Council (ITI) is the premier advocacy and policy organization for the world's leading innovation companies. ITI navigates the constantly changing relationships between policymakers, innovation companies, and non-governmental organizations. We provide creative solutions and policy approaches that advance the development and use of technology around the world. We advocate for global policies that advance industry leadership in technology and innovation; open access to new and emerging markets; promote e-commerce expansion; drive sustainability and efficiency; protect consumer choice; and enhance the worldwide competitiveness of our member companies.

Our members are making major commitments to students and their classrooms, investing time and resources to advance science, technology, engineering, and math skills. By better preparing today's students, we can ensure that the United States will continue its global innovation leadership for many years to come.

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