

## The STEM Initiative

Opening doors for the next generation of science, technology, engineering, and math innovators

## A NATION'S INCREDIBLE OPPORTUNITY

By 2018, eight million jobs in the fields of science, technology, engineering, and math (STEM) will be available in the U.S. Unfortunately, the vast majority of our students will be unprepared to fill them.<sup>1</sup> This is because of a disparity of access to excellent STEM education programs, which disproportionately affects children of color and those from low-income communities. We have the incredible opportunity to provide these students with a high-quality STEM education that will open doors to success as innovators, pioneers, and whatever they can dream.

The root of the problem is in the quality of the math and science education in our schools, which threatens to leave entire groups of students without the skills needed for 21<sup>st</sup>-century jobs.

- Only 15% of low-income 4th graders are proficient in science<sup>2</sup>; By the time they graduate high school, many are not prepared to major in STEM in college
- Just 4% of underrepresented minorities graduate from U.S. high schools considered engineering eligible; as a result, just 3% of our engineering work force is black<sup>3</sup>

No child should have their life prospects limited by their access to education. Our country needs the diverse minds of all children to lead us into the future.

Research proves that high-quality teachers in STEM classrooms are critical to closing the gap, yet teaching positions in these fields remain empty each school year—specifically in low-income communities.

“ Teach For America has become a national leader in recruiting and supporting STEM teachers that are making a real and measurable difference for kids everywhere. We're honored that they have taken a leadership role in 100Kin10.

– Talia Milgrom-Elcott,  
Program Officer, Carnegie Corporation of New York, and Founder, 100Kin10



In 2011, 100Kin10 was launched with Teach For America as one of the founding organizations. The initiative was created in response to a nationwide call to action to

prepare 100,000 new, excellent STEM teachers within the next 10 years. 100Kin10 includes more than 150 cross-sector organizations taking action in response to the crisis in STEM education.



**60%**  
of new jobs in the 21<sup>st</sup> century will require STEM skills possessed by only



**20%**  
of the current workforce



**4%** of underrepresented minorities graduate U.S. high schools considered engineering eligible

**3%**

as a result, just of our engineering work force is black



more than **1/3**  
of our **11,000 +**  
corps members are teaching a STEM subject



since 2006, Teach For America's STEM corps has grown by over **290%** impacting 1.5 million students nationwide

1. The Center on Education and the Workforce. 2. Nation's report card <http://www.timeandlearning.org/files/Strengthening-Science-Education-Full-Report.pdf> 3. NACME 2008 Research Report: *Confronting the New American Dilemma, Underrepresented Minorities in Engineering: A Data-Driven Approach*

## OUR APPROACH

In an effort to fill the need for effective STEM teachers and improve the quality of instruction students receive, Teach For America and the Amgen Foundation launched the Science, Technology, Engineering, and Math Initiative in 2006. Seven years later, we have grown to be one of the largest providers of math and science teachers in the country.

### THE FOCUS OF OUR INITIATIVE IS THREEFOLD:

#### 1 Expand Our Impact

Each year, Teach For America recruits thousands of diverse leaders to teach in classrooms and communities where they are needed the most. Under the STEM initiative, we focus on attracting exceptional individuals to lead math and science classrooms.

- Over 11,000 of the 57,000 applicants to the 2013 corps majored or minored in a STEM discipline
- More than one-third of our more than 11,000 corps members are teaching a STEM subject



To dramatically increase achievement, our students need the highest quality instruction—and teachers equipped to address the additional challenges that students growing up in poverty often face. Currently, our training and support program includes:

- Four to five weeks of rigorous training before entering the classroom
- A teacher coach who provides year-round, content-specific support, tools, and resources
- Year-round targeted professional development sessions
- Leading-edge professional development, including online content communities and training modules, tailored to the specific needs of STEM classrooms

#### Research indicates we are succeeding in STEM classrooms:

A 2012 gold-standard Mathematica Policy Research study commissioned by the Department of Education found that on average, Teach For America secondary math teachers added 2.6 months of learning over one school year

For additional information on our impact, please visit [www.teachforamerica.org/research](http://www.teachforamerica.org/research)

#### 2 Strengthen Our Collective Work

Teach For America is proud to work in partnership with many organizations to improve the quality of STEM education in our nation's highest needs classrooms. Engineering is Elementary ran a professional development workshop for corps members in Baltimore, NASA's Education Program worked with a group of secondary science corps members in Los Angeles, and many of our corps members and alumni are utilizing curricular resources provided by many organizations like Project Lead The Way and Mathalicious. Our teachers also take initiative, reaching out to community allies to open opportunities to their students. **Victoria Ramirez (Bay Area 2011)** fund raised to bring retired astronaut José Hernandez to talks to her first-graders – in a school with no money for field trips or speakers – about Latinos in STEM careers.



### 3 Cultivate Life-Long Leaders

Our corps members witness the disparities their students face and become committed to make a difference.

#### In the classroom:

The majority of our more than 10,000 STEM corps members remain in education after their first two years in the classroom:



#### Michelle Verrochi (South Dakota 2009)

A neuroscience major turned Rosebud Reservation teacher, Michelle instituted Project Lead The Way's Biomedical Science Program at her high school, which prepares students for college with a rigorous project-based curriculum. The program's first cohort graduates this year and will enter college with the confidence and ability to reach their ambitious career goals.



#### Alumni Teachers as Innovators

Just because they're not in a laboratory doesn't mean teachers aren't spearheading the innovations that will move our country forward. Not only are they training the next generation to navigate ambiguity, think analytically, and act strategically – thus they're also pioneering cutting-edge education methods themselves. Irene Hsieh (Metro DC '11) is helping create a healthy living curriculum that has kids as young as six planting community gardens, mapping nutrition access in their city, and writing letters to their Congressmen.

STEM teachers are taking the societal challenges they've encountered while teaching and tackling them head on. For STEM enthusiasts who want to change the world through innovation, there couldn't be a better place to start than the classroom.

#### In education broadly:

Many of our teachers take on school leadership positions after teaching — expanding their reach to even more students. Some with STEM backgrounds are using technology to create and lead innovative schools:

#### Paul Powell (Los Angeles 2003), Founding Principal, Troy Prep

Paul Powell is the founding principal of True North Prep. Last year, 100% of their seventh graders scored proficient or above in math. Before leading Troy Prep, Paul experienced leadership at all levels of education, from a math teacher at LA's Locke Senior High, to a program director at Teach For America, to a resident principal with True North.

#### Allison Scheff (GNO 2003) Executive Director of STEM and the Governor's STEM Advisory Council, MA Department of Higher Education

Allison Scheff (GNO '03) was recently hired as the executive director of STEM at the Massachusetts Department of Higher Education to lead the Commonwealth's interagency Pre-K through workforce STEM initiative. In this role, she will also be staffing the Governor's STEM Advisory Council, which is led by honorary chair Congressman Joseph P. Kennedy, III. Allison previously held a position at the University of Massachusetts-Boston, where she was the Associate Director for the Center of Science and Math in Context.

### From all other sectors:

Our teachers see first-hand the additional challenges our students, families, and communities face and use their STEM talents to address these challenges in fields such as healthcare and social entrepreneurship:

### Mark Wilcox (Baltimore 2009), Tyler Mains (Baltimore 2009) and Shyam Gadwal (Baltimore 2006), Co-Founders, MERIT

Amgen Fellows Mark, Tyler, and Shyam created Medical Education Resources Initiative for Teens, or MERIT, a community program that provides intensive academic support and mentoring to young scientists in Baltimore, with a focus on creating a pipeline of future leaders dedicated to eliminating healthcare disparities. They currently have about a hundred volunteers and almost 60 students involved in one of their programs, with students from the founding 2010 cohort now pursuing STEM majors in top colleges.



“ We are working to solve health issues faced by low-income communities, and we think it’s critical to empower future leaders from those communities ”  
– Mark Wilcox, Baltimore '09

### Spotlight on Computer Science Education

In partnership with the National Science Foundation, the NYC Department of Education, and Dr. Elizabeth Jaffe, Presidential Awardee for Math and Science Teaching, Teach For America will be placing, training, and supporting up to ten computer science teachers in New York City during the 2013-2014 school year. In addition to placing computer science teachers in NYC, many of our alumni leaders are working to expand computer science in their regions. Maurva Couvares and Elizabeth Davidson (both Philadelphia '06) started ScriptEd NYC, a new non-profit attempting to bridge the “digital divide” and teach students in underserved areas the computer science skills they need to land jobs in this high-tech economy.



### Spotlight on Amgen Fellows

Amgen Fellowships are offered to accepted applicants who most exemplify the characteristics Teach For America looks for in its corps members: achievement, perseverance, critical thinking, organizational ability, ability to influence and motivate others, respect for low-income communities, and fit with our mission. Each year, 100 exceptional incoming STEM corps members are offered the reward of a signing bonus and are eligible to receive grants which provide them with the resources and professional development needed to be more effective and innovative STEM educators. To-date, we have trained and supported 550 Amgen Fellows.



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To learn more, visit [www.teachforamerica.org/STEM](http://www.teachforamerica.org/STEM) & follow our STEM Initiative on Twitter  @TFA\_STEM and Instagram  at #iteachSTEM  
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