

2015 WAS A GREAT  
YEAR, AND WE'RE  
EXCITED TO SHOW  
YOU WHY

100K<sub>IN</sub>10

# WHO WE ARE

As of February 2016, 100Kin10 includes over 280 best-in-class partner organizations.

13

School Districts & Charter Management Organizations

9

Professional Associations

13

Government Agencies / Elected Officials

6

Media Organizations

73

Institutions of Higher Education

42

Foundations & Corporations

11

Teacher Residencies / Alternative Teacher Preparation Programs

113

Nonprofits (including Museums and Science-Rich Institutions)

Dear colleagues and friends,

The students in today's classrooms embody our best hopes for tomorrow's workforce, democracy, and globe. They need better-than-ever know-how in science, technology, engineering, and math (STEM) to produce the big ideas that will solve our biggest challenges. And those students need 100,000 excellent STEM teachers to power all that problem-solving.

100Kin10 is charting a course to bringing 100,000 excellent STEM teachers to American classrooms by 2021. But we're not doing it alone. We're innovating a networked model for social change that is inspiring hundreds of likely and unlikely allies to join in, make commitments, collaborate, learn from one another, and jointly solve the big challenges that have long stood in the way of our shared progress.

**As the co-founder and executive director of 100Kin10, I'm proud of the work we're doing in collaboration with our extraordinary network of partners to ensure that every student in America receives an excellent STEM education.**

In this Annual Report you'll read about the full range of our work in 2015—new experiments we tried for the first time, as well as proven efforts that we piloted in years past and that are now core to our approach. These reflect our ongoing commitment to entrepreneurial problem-solving, as we continue to adapt our tactics based on what is—and isn't—contributing to our goal.

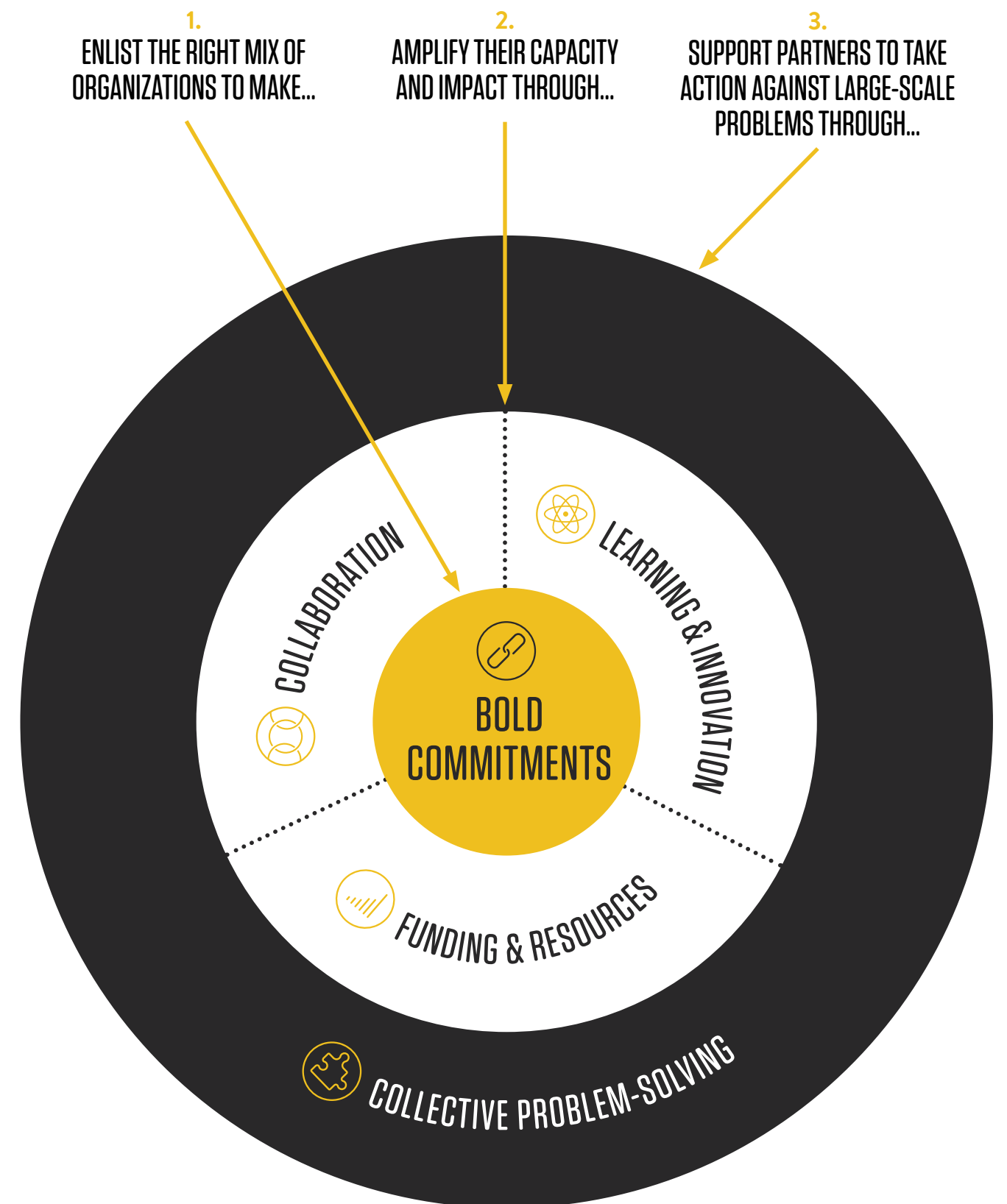
We'll also share some key statistics that demonstrate our progress over this past year and the partner stories that bring these statistics to life.

We hope that this report informs, inspires, and provokes new thinking about how we can move forward together.

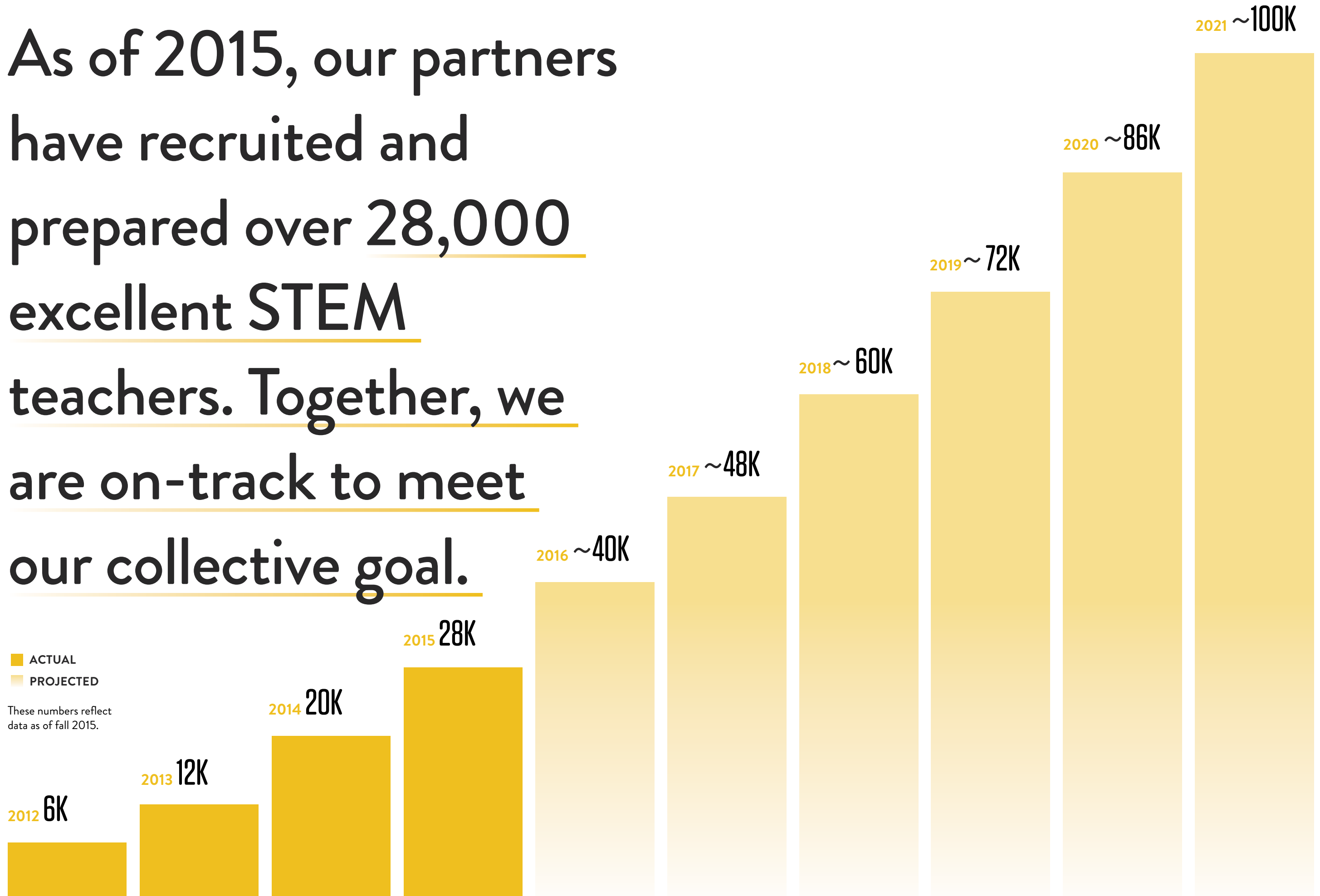
Onward and upward,

Talia Milgrom-Elcott

At 100Kin10, we  
do three things  
to ensure that  
America's classrooms  
are equipped with  
100,000 excellent  
STEM teachers in  
10 years. We...



As of 2015, our partners have recruited and prepared over 28,000 excellent STEM teachers. Together, we are on-track to meet our collective goal.



■ ACTUAL  
■ PROJECTED

These numbers reflect data as of fall 2015.

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# KEY PERFORMANCE INDICATORS



# BOLD COMMITMENTS ENSURE PROGRESS TOWARD OUR GOAL

From the beginning, we understood that addressing a challenge of the magnitude and complexity of 100,000 excellent STEM teachers would require leaders from every sector to identify unique solutions that they and their organizations could commit to.

100Kin10 requires that any organization interested in partnering make an ambitious and measurable commitment to contribute to the goal of 100,000 excellent STEM teachers by 2021. Once a year—following a rigorous and independent vetting process that ensures organizational capacity, strength of commitment, and enthusiasm for enriching the life of the network—100Kin10 welcomes a new class of partners.

## 2015 NUMBERS

32 new partners made 41 commitments to the network

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37 partners are exceeding their commitments

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See pages 30-31 for a look at Fresno Unified School District's journey to 100Kin10 partnership  
See page 48 to understand how we set ourselves up to reach even more teachers in 2016



# COLLABORATION LEADS TO BREAKTHROUGH PERFORMANCE

100Kin10 is powered by relationships. And bringing people, ideas, and resources together is at the core of what we do. Why? Because we believe that collaboration has the potential to help partners see new perspectives, absorb valuable learnings, and ultimately lead to greater impact.

Our in-person gatherings range from our marquee event—the Annual Partner Summit—to dozens of more informal gatherings year-round. 100Kin10 facilitates deeper connections by awarding small collaboration grants that provide two or more partners with funds to meet up in person, explore an idea, learn from each other, and/or sketch out a project to advance their work.

We also experiment with many different types of virtual events—from small-group conference calls to webinars—as a way to keep partners connected throughout the year.

## 2015 NUMBERS

35 partners each accessed an average of \$2,850 in Collaboration Grants, for a total of \$100,000 distributed over the course of the year

Representatives from nearly all 230 partner organizations gathered at the Museum of Science and Industry in Chicago for the 2015 Annual Summit

See pages 32-33 to read a story about how a meeting at the 2015 Annual Summit in Chicago, Illinois, led to a big collaboration in Denver, Colorado

# FUNDING & RESOURCES FOSTER PROGRESS TOWARD COMMITMENTS

**100Kin10 connects partners to high-potential funding opportunities and supports them in increasing their capacity to access critical resources and funds.**

100Kin10 directly enables funding opportunities through the Funders' Collaborative—a diverse community of over 30 innovative and impact-driven funders working toward a singular goal: maximizing the quantity and quality of excellent STEM teachers across the nation.

The Funders' Collaborative is organized as a collection of pledges from funders. Members each pledge a minimum of \$500,000, to be dispersed over no more than three years, to one or more 100Kin10 partner organizations, at the discretion of the funder and according to the funder's internal processes and timelines.

## 2015 NUMBERS

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11 funders made 47 grants to 37 100Kin10 partners—for a total of \$14M distributed over the course of the year

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4 funders ran competitions focused on key challenges, including expanding access to computer science, generating 11 grants—for a total of \$1.6M

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100Kin10 launched direct grantmaking with 10 grants—for a total \$1.9M

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See pages 28-29 to read the story about how two 100Kin10 partners from different sides of the country met on the steps of the White House and went on to form a partnership and seek joint funding for a new venture

# LEARNING & INNOVATION INSPIRE NEW SOLUTIONS

**With our bird's-eye view of the field, 100Kin10 identifies opportunities for partners to learn, experiment, and address key opportunities for innovation.**

In 2015, we launched a Fellowship program dedicated to solving pressing issues in STEM education. It's a rigorous six-month collaboration whereby partner teams work intimately with other STEM leaders, peers, and experts through a human-centered design process anchored by two in-person events, receiving virtual coaching in between. Following the Fellowship, partners submit applications for funding through a 100Kin10 Challenge Grant. Fellows are then networked into an ongoing learning and problem-solving community (a 100Kin10 adaptation of a Networked Improvement Community). Our first cohort of Fellows investigated the challenge of increasing the reach and quality of engineering in K-12 schools across the nation and designed new solutions to address this need within their organizations.

100Kin10 also regularly facilitates "Spotlight Series" webinars on evergreen and emerging issues of importance to the field. These webinars are hosted by best-in-class partner organizations, and provide an opportunity for them to discuss a successful and relevant aspect of their work.

## 2015 NUMBERS

**28 individuals from 11 partner organizations designed solutions to the challenge of improving engineering instruction in K-12 schools**

See pages 34-37 for the story of how the Bay Area Discovery Museum used the fellowship opportunity to develop an idea for a Mobile Engineering Lab—and went on to raise \$380,000 toward implementation

# SOLUTION LABS ENABLE COLLECTIVE PROBLEM-SOLVING

**100Kin10 facilitates opportunities for partners to collectively address shared problems that are bigger than any one organization can tackle on its own.**

A Solution Lab is one key way we accomplish this. World-class experts and leaders come together with participating partners to explore a problem and formulate possible solutions. Partners contribute funds, enabling the creation of a concrete product, strategy, or intervention. Ultimately, such networked action helps partners accomplish far more than if they had gone it alone. To date, we've executed two Solution Labs: one on STEM teacher recruitment and the other on change management for college- and career-ready standards.

## 2015 NUMBERS

The Carnegie Corporation of New York, Chevron, and over 20 programmatic partners invested \$450,000+ to develop, test, and publish an innovative toolkit for how to have powerful conversations about the transition to more challenging academic standards

See pages 38-41 to learn more about the toolkit and read a few excerpts from the toolkit itself

## What people are saying

“We have found tremendous value in being part of 100Kin10 and fully believe it has improved our access to the best organizations doing the most effective work in the STEM teacher space, while also positively challenging the way we think about investing our resources to best meet the needs of teachers and ultimately their students. 100Kin10 is a real-time learning and action forum that has evolved along with its partners, continuously seeking to cultivate the best that everyone has to offer, responding to and exploring new ideas and tackling tough questions.”

—Tracy Bame, Freeport-McMoRan Foundation, President

“We are particularly grateful for their [100Kin10’s] guidance in helping us make STEM a priority in our program recruitment. Last year, 67 percent of our aspiring principals and 55 percent of teacher leaders in our Emerging Leaders program had a STEM background. These educators are already getting impressive results for students, and as school leaders, they are well-positioned to bolster science and math instruction across the high-need schools where they work for years to come.”

—Jean Desravines, New Leaders, Chief Executive Officer

“100Kin10 set a vision for how a wide variety of entrepreneurial partners could collectively bring 100,000 new STEM teachers to America’s classrooms by 2021. What’s most significant is that this vision focuses not only on recruiting top talent, but also making sure these teachers get the right support to understand how to best reach all students and remain committed to teaching. Being a partner in this initiative has opened up opportunities for New Teacher Center to innovate ways we can offer much needed support to more and more new STEM teachers.”

—Ellen Moir, New Teacher Center, Founder and Chief Executive Officer

## What people are saying

“Reading through the list of 100Kin10’s partners is an eye-opening experience. It’s not every day you see the Girl Scouts listed proudly side-by-side with Chevron and Dow Chemicals. But what this unconventional gathering of corporations and nonprofits seems to signal, as put best by the team at 100Kin10, is “the magnitude of change our country needs in STEM learning.””

—Inside Philanthropy, “If the STEM Funding Push Has a Headquarters, It’s This Organization,” September 2015

“What started as a group of 28 corporations, universities and nonprofits has since ballooned into a robust initiative with more than 230 public and private partners around the country. 100Kin10, which is funded by grants, acts as a facilitator between partners like AT&T, Lockheed Martin and the American Museum of Natural History.”

—CNN Money, “Wanted: 100,000 new STEM teachers,” November 2015

# PARTNER IMPACT STORIES



# IISME + New Visions: The Road to Partnership

100Kin10 actively facilitates collaboration among partners. We believe that partners can better recruit, train, and support even more excellent STEM teachers by working together.

## July 2015: A Meeting at the White House

“I was standing on the steps of the White House, really excited, just wanting to talk to somebody. Then I encountered someone who shares a similar fervor about this amazing opportunity...100Kin10 had made me feel special by inviting me, and likewise by inviting Shari...”

—**Roberta Trachtman**, New Visions For Public Schools (New Visions)

They may reside on separate coasts, but the synergy between Roberta Trachtman and Shari Liss (Industry Initiatives for Science and Math Education—IISME) was apparent from the moment they met on the steps of the White House. They were among the partners invited by 100Kin10 to brainstorm about the biggest challenges facing STEM teaching with winners of the Presidential Awards for Excellence in Mathematics and Science Teaching. Little did they know that there was a purpose behind their meeting: 100Kin10 intentionally invited partners who had exhibited outsized leadership in 100Kin10 and potential for blasting through their commitments.

Nervous chatter quickly turned to shop-talk as Shari told Roberta that IISME wanted to understand the impact of its work in education. Coincidentally, Roberta’s expertise is in evaluation.

“Roberta had all these brilliant ideas while we were standing in the hot sun...I think that was a really exciting moment, when we realized we shared that desire to understand the impact of the work.” —**Shari**

Both IISME and New Visions are dedicated to developing and retaining excellent teachers. Based in San Francisco, IISME’s 31-year old Summer Fellowship Program places teachers in STEM workplaces so that they can experience STEM practices first-hand and better prepare their students for STEM careers. And in New York City, New Visions trains teachers in inquiry-based instruction and leadership, while developing pathways for teachers to exercise those skills.

## July - December 2015: Deepening the Conversation

In the months that followed, the two new friends continued to share information, trying to identify the most effective way to combine the strengths of their organizations.

“I think part of what 100Kin10 does is bring into conversation people whose organizations...could stand up next to each other and people would see the Venn Diagram, the sweet spot.” —**Roberta**

They agreed that bringing the San Francisco-based IISME Fellowship program to New York City was a long-term goal. IISME had been looking to expand beyond California, and New Visions wanted to help the graduates of its teacher-preparation program develop their careers, giving

the STEM teachers what they crave—a connection with current practices, without leaving teaching. It could provide a path up, not out.

“We started talking about what we are each trying to do, in terms of teacher leadership or the fellowship model and how those pieces might work combined across the country.” —**Shari**

Shari and Roberta knew they had to meet in person to bring their ideas to life, so they applied for a 100Kin10 Collaboration Grant to pay for the IISME folks to fly to New York City. In less than a month, they received word. They got the grant. This funding would allow them to meet face-to-face for a two-day collaboration session. It also provided their first real deadline.

## February 2016: Making Partnership a Reality

Shari and Kate Hiester, IISME’s Director of Program Development, arrived in New York City for a two-day marathon to explore how to set up a partnership.

“The deeper we got into each of our models, the more exciting that became. It was evident that we all agreed on leadership development, that we agreed on inquiry-based teaching and learning, and that we agreed on constant improvement.” —**Shari**

They needed something small to serve as a logical, feasible start. Shari and Kate listened to two New Vision teachers speak passionately about integrating inquiry learning into their classrooms. New Visions teachers don’t supply all the answers to their students—they ask the right questions to guide their students to the answers.

“Inquiry-based teaching closely reflects the concept of continuous improvement found at leading STEM organizations; it requires both teachers and students to practice 21st Century Skills in effective, organic ways; and it leads teachers into data-driven decision-making about their work.”

New Visions’ inquiry-based model of teacher training would help IISME Fellowship graduates realign classroom teaching to reflect their new understanding of how STEM workplaces function, enabling them to collaborate without leaving the classroom entirely. And it would support their growth as

teacher-leaders able to transform STEM learning for students.

“We got super-excited about incorporating New Vision’s inquiry-based leadership methodology into the IISME fellowship program in a formal way, through leadership micro-certifications; once implemented, this collaboration could pave the way for bringing the IISME/New Visions Fellowship + Leadership Micro-Certification to teachers in New York City.” —**Shari**

Now that the partners had a short-term plan, they needed funding. Through 100Kin10, Shari learned of a California grant deadline with Silver Giving Foundation that was just two weeks away. They worked fast, delivering a Letter of Intent (LOI) to submit a proposal for the California grant.

## March 2016: Learning from a Bump in the Road

A month after submitting their proposal, the pair got disappointing news: their LOI did not lead to a request for proposal.

“It was a disappointment, but the feedback from the program officer was powerful and important and will help guide our next submission.... We learned that IISME should incorporate some of our local and strong district partners into the ask...”

## 2016 and Beyond: Never Giving Up

IISME and New Visions are planning to pursue more grant opportunities to help them implement the first round of their partnership, as they continue absorbing valuable learning from other partners.

“We will bring our partnership model to the 2016 100Kin10 Annual Summit to gain more feedback from funders and other potential partners.”

In mere months, Roberta and Shari went from being strangers on the White House steps to STEM business partners taking big steps to empower and educate STEM teachers nationwide. The force is strong between these two partners. And it is a force to be reckoned with. As Shari puts it, “We’re going to conquer the world, one STEM teacher at a time.”

# Fresno Unified School District: Making Connections from Day One

The 100Kin10 onboarding process connects best-in-class organizations to each other, seeding the deep relationships needed for breakthrough collaboration and innovative problem-solving.

## 1. NOMINATED BY THE S. D. BECHTEL, JR. FOUNDATION



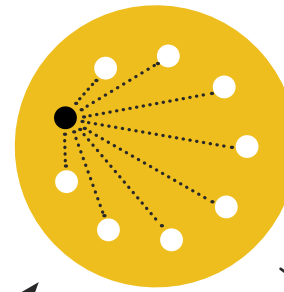
## 2. APPLIED WITH AN AMBITIOUS COMMITMENT



This diagram illustrates the partners Gayle Spencer (Coordinator, Teacher Residency Program, Fresno Unified School District) met and connected with during each step of her 100Kin10 onboarding experience.



## 3. ACCEPTED INTO THE NETWORK WITH A CELEBRATORY PHONE CALL WITH 100KIN10 ED TALIA MILGROM-ELCOTT

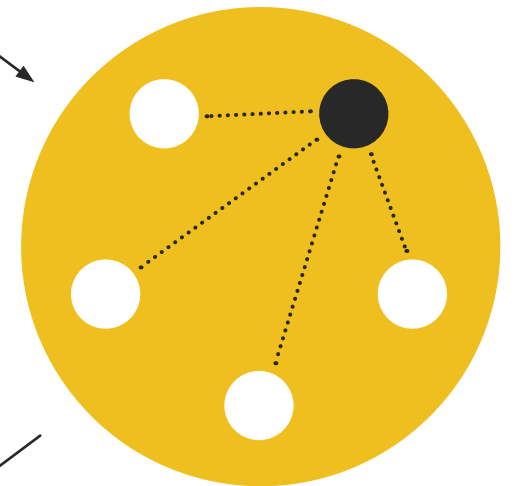


## 4. SMALL GROUP CALL

Call included the following partners: Arizona Science Center, Business Innovation Factory, Center for Science Teaching & Learning at Northern Arizona University, Colorado Education Initiative, Generation TEACH, The George Washington University, GOORU, and The Rodel Foundation of Arizona.

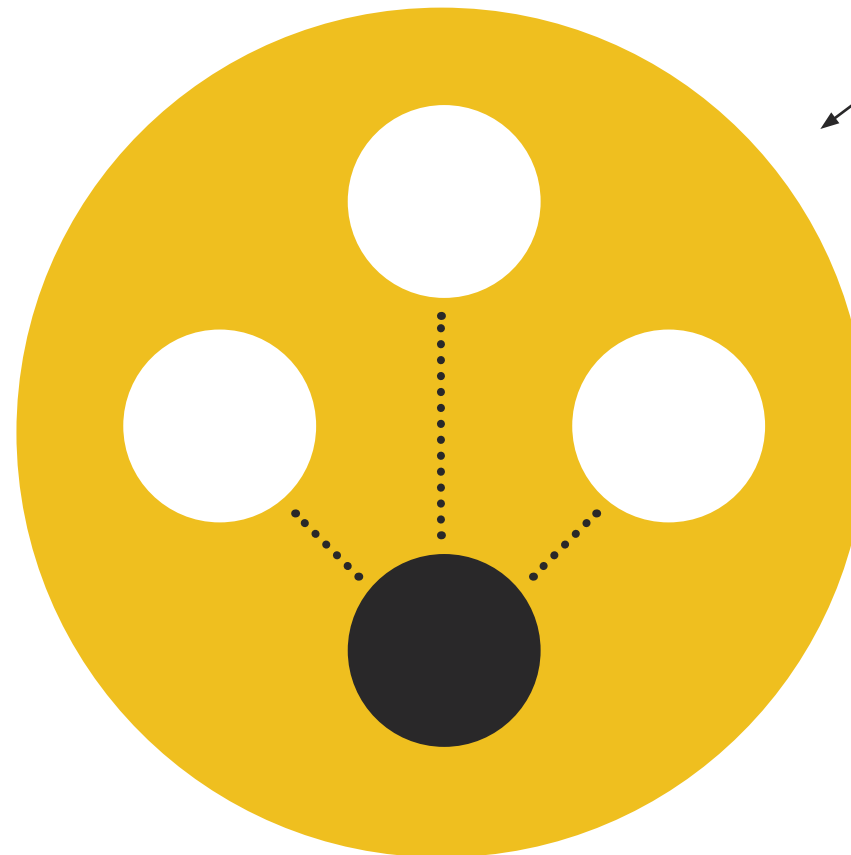
## 6. ANNUAL SUMMIT IN CHICAGO, IL

Arizona State University  
WestEd  
Noble Network



## 5. NEW PARTNER UNCONFERENCE IN NEW YORK, NY

American Museum of Natural History, Bay Area Discovery Museum, Sesame Workshop, Science Friday



\* While all onboarding activities are meant to connect partners to each other, the hallmark of the process is our New Partner Unconference. As its name suggests, it's not your typical conference. Piloted in 2015, it's one of our latest experiments: an intimate gathering where partners determine and drive the agenda, enabling them to connect in an authentic and candid manner.



# Chance Meeting at Annual Summit Results in Big Collaboration Back Home

Amanda Ludwig is a big fan of 100Kin10. Currently working as a Talent Management Project Manager, she has been with Denver Teacher Residency for approximately three years.



Smiles and stamina: Amanda snuck in some down town during the 2015 Annual Summit.

In that time she's attended two Annual Summits, a brainstorming session at the White House about the challenges facing STEM education, a solution lab with partners in NYC, a collaboration grant with ASU, and several regional breakfasts.

"I beg for money to go to these things...100Kin10 does an excellent job making these events feel important... like the work feels important."

Amanda smiles when recounting the seemingly "random" connections she made at 100Kin10 events. Yet, random often happens on purpose, thanks to careful design and planning on the part of 100Kin10. For example, the Annual Summits offer partner-led sessions that attendees can visit as they wish, creating opportunities for partners to design their own schedules and engage with other attendees who share their interests.

Checking her program during last year's Annual Summit in Chicago, Amanda noticed that a session was being facilitated by Colorado School of Mines and University of Northern Colorado, two big partners that she already worked with on a fairly regular basis. Grabbing a seat in the back, Amanda was shocked to learn that Mines/UNC had created a new STEM Teacher Preparation Program.

"They're partnering to do this really incredible work bringing STEM teachers into the city of Denver. It's crazy that I don't know about this."

Afterward, she exchanged contact information with the presenters and returned to Denver determined to follow up with these exciting connections. She excitedly told her



Small group sessions at the 2015 Annual Summit enabled partners to dig into the issues that really matter to them and connect with like-minded partners.

Denver Public Schools colleagues about her discovery. "Hey, they're building a cadre of really amazing STEM teachers, student-teachers. We need to figure out how to get them into our schools."

Although it took almost a year to get the initiative off the ground, Amanda and Justin Smith, the Manager of Student Teacher Pipelines at DPS, are now consulting with Mines/UNC on their entire student-teacher placement process and were also invited to serve on their Teacher Advisory Group, enabling them to help shape key facets of the teacher prep program.

The Teacher Advisory Group brings in community members from their divisional universities, as well as students and prospective students. Thanks to a 100Kin10 collaboration grant they received in October of 2015, the advisory group will receive a few thousand dollars to cover expenses like transportation and food, which will help keep these valuable voices coming into the room for the next year.

"It's just been this really remarkable experience—seeing it finally get off the ground and actually take flight."

Together, they're working to identify and capture engineering students with the aim of minting new teachers. "It's an uphill battle," Amanda acknowledges, "against the perception of teaching, or lack of prestige, especially for students coming out of a renowned university like School of Mines, where they can probably go out and make quite a bit of money."

In Spring 2017, 4 (out of 11) members of the first cohort of student teachers from the Mines/UNC STEM Teacher Preparation Program will be joining DPS in strategically designed teaching positions. For the first time ever, these carefully selected individuals will be graduating from the Colorado School of Mines with a degree in engineering, and from UNC with a degree in teaching. At DPS, they'll spend one semester completing their field experience in a STEM classroom setting and another semester student-teaching (as education majors do) so that they really get a sense of what it means to be a science teacher coming out of an engineering degree program.

"In a world where STEM teachers are hard to find and the number of student-teachers is going down pretty dramatically, hiring these engineering teachers is a huge step forward."

# Bay Area Discovery Museum: Solving Old Problems in New Ways During the 100Kin10 Fellowship

Picture a Mobile Engineering Lab traveling across California, reaching thousands of kids in schools, libraries, science fairs, and parks. When it starts rolling in 2017, this Mobile Lab from the Bay Area Discovery Museum will be traveling across the city—delivering tools that teachers desperately need to begin teaching engineering to kids in their in early years.

“It’s amazing to be part of an organization like 100Kin10 that is coming up with some pretty cool solutions for how to bring more innovation into what is often a very slow-moving field.”

If not for the 100Kin10 Fellowship program, the Mobile Engineering Lab would not have been conceived. The 2015 Fellowship program was designed to create a community of problem-solvers focused on finding new ways to bring engineering education to K-12 classrooms across the country. This yearly initiative is a rigorous, collaborative six-month learning experience whereby partner teams work elbow-to-elbow with other STEM leaders, peers, and experts at three in-person events, receiving virtual coaching between events. At the end, partners submit competing applications for funding through the 100Kin10 Challenge Grant.

When the Museum team (Sara Norris, Irina Thompson, and Elizabeth Rood) arrived in New York City for the first in-person Fellowship meeting, they weren’t even thinking of a Mobile Lab. They had a completely different idea in mind. Irina loved that 100Kin10’s “flipped funding” model “required them to start with collaborative development work before coming up with a competitive proposal rather than submitting a proposal, rather blindly, then having the discussion after the fact.”

“It’s amazing to be part of an organization like 100Kin10 that is coming up with some pretty cool solutions for how

to bring more innovation into what is often a very slow-moving field.”

To start, 100Kin10 asked teams to put any preconceived ideas “on the back burner,” because initial solutions don’t often focus on root causes and lack the crucial element of user input. Instead, the 11 teams—which included Baltimore City Public Schools, Washington STEM, and Bank Street College of Education, among others—spent two days brainstorming, digging deeply into the question: “Where are the barriers to having high-quality engineering teaching in our schools?”

Elizabeth says this exploratory questioning process helped their team identify two roots causes of the problem. First, people (teachers included) don’t really understand what engineers do: “it’s hard to think beyond building a bridge.” Second, the Museum is located within a park and is not that easy to get to.

From these two insights came a new solution: “What if we had a mobile engineering lab that doubled as a billboard as it’s driving through the community while introducing teachers to the types of engineering they can do with little kids that is developmentally appropriate but also helps build the skills and



100Kin10 Fellows came together to untangle the obstacles to increasing the reach of engineering in PK-12 schools.

the thinking that they ultimately need.”

The Museum team went home armed with targeted homework and plans to test their ideas with their core stakeholders. They surveyed teachers using a slide show—visuals helped the busy teachers focus—and the teachers loved it! Their extensive testing (and coaching from 100Kin10) helped the Museum team develop and refine their new idea into a working concept over the intervening months.

In September, the Museum team returned to New York to present their prototype for feedback in the form of a “practice pitch.” Rood admitted: “It was very intimidating initially because you have some really high-caliber folks in the room from the US Department of Education, to venture capitalists, funders, 100Kin10 staff...an entire conference table full of these folks.”

The Museum team’s initial pitch was too broad, and the experts helped them hone in on their audience and scope, asking: “What’s the unit of change in there—are you trying to change kids, are you trying to change teachers, or are you trying to change the schools? Where is it?”

The questioning worked. Their final proposal incorporated the feedback, and the project was awarded a \$380,000 grant from 100Kin10. In total, 100Kin10 made 11 grants totaling \$1.94 million.

“We didn’t have to have it all answered before we came to them with our ideas. It’s difficult for nonprofits to ‘sell innovation,’ as few funders want to fund an untested idea. I think 100Kin10 knows that to really shift education in a fundamental way you have to create space for experimentation.”

And what would the Museum team advise future fellows? “Just jump in and do it. Don’t worry about being perfect. The Fellowship is intense, but worth it. You get back what you put in.”

# 100Kin10 Partners: Developing a Toolkit to Support the Move to Challenging Academic Standards

A solution lab is a process that aggregates demand and dollars for a collective solution to a shared problem. The hallmark of the process is a convening where partners learn from relevant experts, deliberate possible approaches, and make decisions about a concrete product, strategy, or intervention to bring to life.

As a result of our second solution lab, over 20 partners, in partnership with messaging guru Dr. Drew Westen, brought a much-needed product to market: clear and tested messages that address teachers' and parents' concerns, hopes, and needs about the move to more challenging academic standards. An innovative approach to a toolkit, *Plagiarize This* supports partners and others to easily adapt and use these messages for their own communications needs.



*Plagiarize This* Toolkit



Partners from best-in-class organizations flexed their marketing muscles in our Messaging Bootcamp.



Messaging Bootcamp participants shared information about their needs during registration.

**This toolkit is designed to help you have more inspired conversations with teachers, parents, and the general public about college- and career-ready standards, like the Common Core and Next Generation Science Standards. It will help you to honor the challenges they have experienced to date and build both understanding of and enthusiasm for these higher standards.**

So—how do you structure messages in a way that opens up the space for productive and meaningful interactions? Based on years of research by Dr. Drew Westen, successful messages use an architecture that enables you to:

- Connect around shared values and empathize with lived experiences
- Acknowledge concerns
- Prepare for potential misperceptions
- Connect your audience's values to your solution
- Establish context and credibility
- Avoid exacerbating conflict and confusion

## Connect around shared values and empathize with lived experience

According to Drew's research, these are the messages that most resonate with parents, teachers, and the general public. These messages will reassure your audience that you understand where they're coming from and share their values—opening up the space for deeper and more meaningful conversations about shared standards.

### 7 shared values

1. American students should be able to compete with students from anywhere in the world. (primarily for parents)
2. All students—regardless of class or color—deserve equal opportunity.
3. Kids who move across state lines shouldn't be bored or disadvantaged because schools are not teaching the same thing.
4. Times change. Technology changes. Teaching and learning should, too.
5. Math homework is different now, and schools need to support parents in understanding how their kids are learning.
6. The transition to the Common Core was much harder than it needed to be. (primarily for teachers)
7. Education should focus more on high standards and high-quality teaching and less on high-stakes testing.

## What people are saying

“100Kin10 makes visible the critical work in science teaching and learning being done by partners across the country. This transparency makes clear the diverse interventions required to build equitable access and opportunity to quality STEM experiences and the diversity of organizations required to make it happen.”

—**Andrea Ingram, Museum of Science and Industry, Vice President of Education and Guest Services**

“No one organization or sector is going to be the solution to advancing STEM teaching and learning in the United States. Rather, it will be those organizations that best harness the collective power of many to drive forward genuine, evidence-based impact. 100Kin10 is a stellar example of one such organization.”

—**Scott Heimlich, Amgen Foundation, Vice President**

“Participating in the 100Kin10 movement has enabled the Dana Center to work with organizations that share our mission to tackle one of the grand challenges of our generation: improving STEM learning outcomes for our nation’s youth. 100Kin10 has been a source of inspiration and a wealth of great ideas for improving our work.”

—**Uri Treisman, The Charles A. Dana Center, University of Texas at Austin, Founder and Executive Director**

“Excellent STEM teaching plays a crucial role in preparing students to become tomorrow’s innovators. 100Kin10 is a powerful venue to convene and create the kinds of collaborative partnerships essential for success, and we encourage others to join us in support of this important initiative.”

—**Blair Blackwell, Chevron, Manager of Education and Corporate Programs**

## What people are saying

“It has been truly inspiring to Carnegie Corporation of New York to belong to a network of partners who are all demonstrably committed to ensuring the highest level of academic outcomes and STEM career access for all of our nation’s children. The power behind the 100Kin10 network is the depth of knowledge and experience every partner brings to collaboratively lift up and address a shared challenge. Albert Einstein said it best: ‘No problem can be solved from the same level of consciousness that created it’.”

—**LaVerne Srinivasan, Carnegie Corporation of New York, Vice President, National Program and Program Director, Education**

“At CGI America, I remember several years ago President Obama said that the country needed 100,000 new STEM teachers in high schools. And it was obvious once the Republicans won the House of Representatives that he wasn’t going to get any more money. So the Carnegie Corporation came together to form 100Kin10—and we work with them—and they wound up with more than 200 other partners. To date, they have raised more than \$80 million with no government money.”

—**Inc. Magazine Interview with President Bill Clinton, “Bill Clinton on How Entrepreneurs Can Transform the Country,” August 2015**

“What makes the program unusual is its method. A little like a venture-capital approach, 100kin10 will bring together groups of grant seekers—nonprofits and individuals who want to bring more engineering teachers and programs into schools—to fine-tune their program ideas and corresponding grant proposals and provide them with an opportunity to learn from one another and outside experts.”

—**Chronicle of Philanthropy, “Science-Education Nonprofit Adopts Venture-Capital Approach,” May 2015**

# LOOKING AHEAD



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LAVOISIER · FOUCAULT · M

BE FACE-TO-FACE  
WITH THE WORLD'S MOST  
AMAZING ROBOTS.  
**ROBOT  
REVOLUTION**

GEAR UP  
FOR THE COOLEST ROBOT  
EVER ASSEMBLED.  
**ROBOT  
REVOLUTION**

RED  
STAIRS  
ELEVATOR

BLUE  
STAIRS

? Information ?

# Identifying and Confronting the Grand Challenges to Reaching 100,000 Excellent STEM Teachers

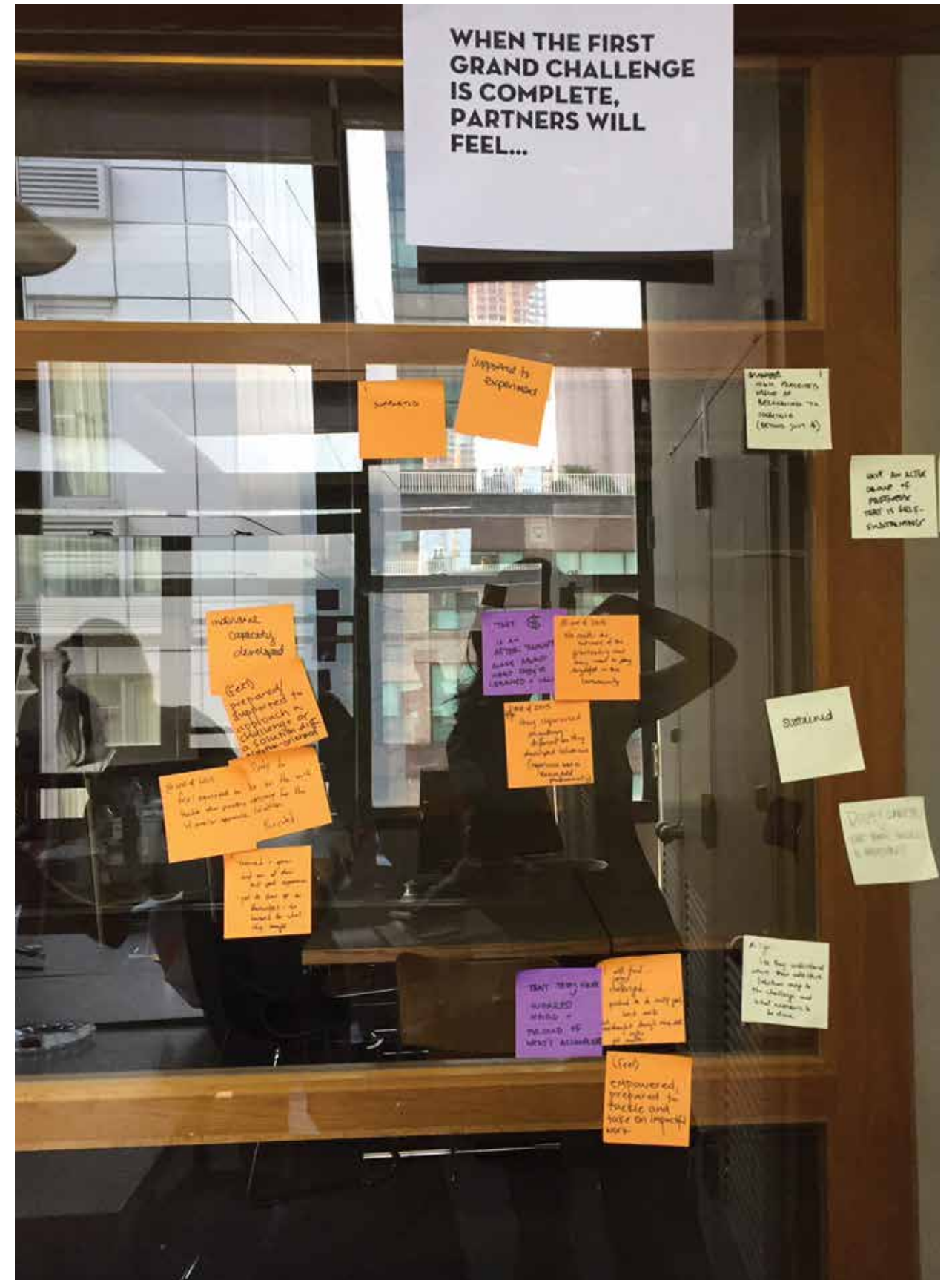
Over the past nearly five years, we have worked closely with our best-in-class partner organizations to help them go above and beyond to achieve their 100Kin10 commitments.

Through our deep access to both official and anecdotal data from the field at large, we have realized that, despite the high-quality of the work, and impressive successes, challenges that have historically made it difficult to get excellent STEM teachers into all classrooms endure.

We have come to see that, too often, the field is working around big, system-level challenges, rather than working through these challenges and identifying ways to overcome them. If we were to continue in this way, we might reach our goal of providing America's classrooms with 100,000 excellent STEM teachers, but we would not solve the underlying issues that created the need originally. We would have accomplished the task without solving the problem.

Understanding this, in 2016 we are growing the network's focus on the big, system-level challenges, alongside the continued and important work of supporting our partners to make and then achieve ambitious and high-impact commitments.

In the coming year, we will complete the task of identifying the impediments that stand in the way of reaching the goal of 100,000 excellent STEM teachers, creating a complete set of grand challenges, supported by thorough and deep research. The challenges will guide the network's organizational priorities and work and, we hope, offer direction in activating solutions and driving research across the field. We expect that, as partners and others break down these barriers, the challenge areas will shift, or entirely recede, while others might appear in their place, as a result of new approaches to training and retaining excellent STEM teachers. Because of this, we understand that the grand challenge areas will never be a final set of barriers to overcome, but rather a way of organizing and mobilizing the work that is needed to equip all students with excellent STEM skills.





# Focusing on Increasing the Supply of New Excellent STEM Teachers

Every fall, partners nominate strong organizations to apply to join the network. In 2015, we prioritized new partners that directly prepare new STEM teachers (alongside our ongoing focus on under-represented students and teachers). For the first time, we actively recruited leading organizations. To do so, we employed a research-based approach to identify high-potential candidates and then hosted a White House event for top prospects and key veteran partners.

During this day-long event, 60 100Kin10-invited attendees engaged with leaders from the White House Domestic Policy Council, the White House Office of Science and Technology Policy, the National Science Foundation, and the US Department of Education, including Dr. John Holdren, Dr. Joan Ferrini-Mundy, Dr. Jo Handelsman, Tom Kalil, and Roberto Rodriguez. This session revealed valuable strategies for reaching 100,000 STEM teachers in 10 years. Ultimately, 159 organizations were nominated (our most ever) and 100 applications were submitted and reviewed by 50 volunteer partners and a panel of nationally-renowned experts.

**In 2016, we welcomed 21 new partners into the network who will focus specifically on increasing the supply of excellent STEM teachers. Here are a few examples:**

- **Spelman College:** By 2020, we will increase the number of STEM pre-service teachers enrolled in our teacher certification program to 10 graduates per year.
- **Teach Kentucky:** By 2020, we will recruit and train 120 new STEM educators, with an intentional strategy for recruiting minority STEM teachers.
- **University of Virginia:** By 2021, we will produce 265 new secondary mathematics and science teachers who will qualify for state licensure and be assessed by Praxis II examinations graduating from CAEP accredited bachelor's or master's programs.

# Learning from Stumbles

We are proud to have had many wins in 2015. But we know that if we're pushing the envelope to find new ways to move a diverse network toward success, we also need to experiment with new ways of doing our work. That means that, sometimes, we'll fail. In 2015, we experimented with a few strategies that didn't turn out as planned. Here's a smattering of what we did and how we're learning and continuously improving.

## STUMBLE

## LEARNING

### ONLINE LEARNING PLATFORM

The beta version of our online platform did not serve the learning needs of our partners.

Moving forward, we will do much more user testing. We closed the beta and are analyzing user feedback to design an improved online tool for learning and collaboration.

### ACADEMIC STANDARDS MESSAGING TOOLKIT

The standards messaging research and toolkit took a long time to bring to market.

Moving forward, we will plan for the time required to work with so many partner-clients—especially in such a heated political environment.

### CONTRACTING

Though 100% of partners contributed data through the annual survey by the late summer, complications with an outside vendor during the analysis process created a significant delay in sharing timely and actionable outcomes with the network.

Moving forward, we will more clearly outline expectations, deliverables, and timelines with outside contractors. We've found another firm to do data analysis and plan to deliver analysis and learnings to our partners and the field early in 2016.

### PARTNER SUPPORTS

Though we invested a significant amount of time and dollars in the first months of 2015 to assess our current partner offerings (whose goal is to aid partners in succeeding at their commitments), we did not move to pilot revised offerings until late in 2015.

We are working to get a clearer handle on the sources of data to draw on to evaluate our approach to helping partners succeed at their commitments.

# PARTNER DIRECTORY

# Partner Directory

(F) = Funding Partner

## A

Academy for Urban School Leadership  
The Achievement Network  
Agile Mind  
The Algebra Project, Inc.  
American Association of Physics Teachers  
American Chemical Society  
American Federation of Teachers  
American Modeling Teachers Association  
American Museum of Natural History  
Amgen Biotech Experience Program Office @  
Education Development Center, Inc.  
Amgen Foundation (F)  
APS Foundation (F)  
Arizona Science Center  
Arizona Science Teachers Association  
Jeffrey H and Shari L Aronson Family  
Foundation (F)  
Aspire Teacher Residency  
ASSET STEM Education  
AT&T (F)

## B

Baltimore City Public Schools  
Bank Street College of Education  
Battelle  
Bay Area Discovery Museum  
S. D. Bechtel, Jr. Foundation (F)  
BetterLesson  
Boettcher Teacher Residency (PEBC)  
Boise State University  
The Boston Foundation (F)  
Boston Teacher Residency  
Boston University, College of Engineering  
Breakthrough Collaborative  
The Broad Institute of Harvard & MIT  
BSCS (Biological Sciences Curriculum Study)  
Business Innovation Factory

## C

CA Technologies (F)  
California Science Teachers Association  
California State University  
California STEM Learning Network  
Capital Teaching Residency  
Carnegie Corporation of New York (F)  
Carnegie Science Center  
CDE Foundation (CDEF)  
Center for Children and Technology @  
Education Development Center, Inc.  
Center for the Future of Arizona—Move On  
When Ready  
Center for High Impact Philanthropy  
The Center for Innovation in Engineering and  
Science Education (CIESE)  
Center for Mathematics Education at the  
University of Maryland, College Park  
Center for Science Teaching and Learning, NAU  
Center for STEM Education, UT Austin  
Chabot Space and Science Center  
Change the Equation  
Charles A. Dana Center  
Charlotte-Mecklenburg Schools  
Chevron (F)

Citizen Schools  
Clinton Global Initiative  
Colorado Education Initiative  
Colorado Geographic Alliance's Moving GIS into  
the Classroom  
Colorado School of Mines/Uni. of Northern  
Colorado STEM Teacher Preparation Program  
Community Resources for Science

## D

DC Public Schools  
Michael & Susan Dell Foundation (F)  
Denver Teacher Residency  
Digital Promise  
Discovery Cube Orange County  
DonorsChoose.org  
The Dow Chemical Company (F)  
Drexel University School of Education  
DSST Public Schools

## E

E3 Alliance  
Educate Texas  
Education Pioneers

EnCorps STEM Teachers Program

Erikson Institute

Expanded Schools

Exploratorium

## F

Florida International University

Freeport-McMoRan Copper & Gold Foundation (F)

Fresno Unified School District

The Bill & Melinda Gates Foundation (F)

## G

Gay & Lesbian Fund for Colorado, a program of the Gill Foundation (F)

Generation Teach

George Washington University Secondary Education

Girl Scouts

Girls Who Code

GlassLab

GOOD

GOODcorps

Gooru

Google (F)

Graduate Programs in Science and Mathematics, Morgan State University

The Greater Texas Foundation (F)

Guilford County Schools

Gulf of Maine Research Institute

## H

Harvard Graduate School of Education - Harvard Teacher Fellows

Heising-Simons Foundation (F)

The Leona M. and Harry B. Helmsley Charitable Trust (F)

The William and Flora Hewlett Foundation (F)

High Tech High

Hillsborough County Public Schools

## I

I-STEM Resource Network

IAS/Park City Mathematics Institute

IDEA Public Schools

Illustrative Mathematics

Indiana Department of Education

Industry Initiatives for Science and Math Education

The Ingenuity Center - UT Tyler

Institute for School Partnership  
INSPIRE @ Purdue University

Intel Corporation

International Technology and Engineering Educators Association (ITEEA)

Internationals Network for Public Schools  
Intrepid Sea, Air & Space Museum

iSMART

## J

Jacksonville Teacher Residency

Jhumki Basu Foundation

The Tom Joyner Foundation

JPMorgan Chase (F)

## K

Kansas State University

Kenan Fellows Program for Curriculum and Leadership Development

Kennesaw State University STEM Teacher Education (Owl Teach)

KIPP Houston

KQED

## L

Lawrence Hall of Science

Lehman College (Research Foundation of The City University of New York)

Leonetti O'Connell Family Foundation (F)

LessonSketch/University of Michigan

Jay and Tammy Levine Foundation (F)  
Lockheed-Martin (F)

The Long Beach Educational Partnership

Los Angeles Unified School District

Loyola Marymount University School of Education

Loyola University at Chicago

## M

John D. and Catherine T. MacArthur Foundation (F)

Maricopa County Education Service Agency (MCESA)

Mary Lou Fulton Teachers College at Arizona State University

Maryland Business Roundtable for Education

Mass Insight Education

Massachusetts Executive Office of Education

Match Teacher Residency

Math for America

Mathalicious

Mathematical Practice Institute @ Education Development Center, Inc.

Math Teachers' Circle Network

Merrimack College

Michigan State University

Mills College, School of Education

MIND Research Institute

Montclair State University

M.J. Murdock Charitable Trust (F)

Museum of Science and Industry

Mytonomy

## N

National Academy Foundation

National Academy of Sciences

National Aeronautics and Space  
Administration (NASA)

National Alliance for Partnerships in Equity

National Center for Teacher Residencies

National Center for Technological Literacy at  
the Museum of Science, Boston

National Commission on Teaching and  
America's Future

National Council of Teachers of Mathematics

National Geographic Education Program

National Math and Science Initiative

National Network of State Teachers of the Year

National Oceanic and Atmospheric  
Administration

National Science Foundation

National Science Teachers Association

National Writing Project

New Jersey Center for Teaching and Learning

New Leaders, Inc.

New Teacher Center

New Visions for Public Schools

New York Academy of Sciences

New York Botanical Garden

New York City Department of Education

New York Hall of Science

NewSchools Venture Fund (F)

Noble Network of Charter Schools

North Carolina New Schools Project:  
Breakthrough Learning

Notre Dame of Maryland University

Noyce Foundation (F)

NYU Steinhardt School of Culture, Education,  
and Human Development

NYU Tandon School of Engineering

## O

Office of Colorado State Senator Mike Johnston

Office of U.S. Representative Mike Honda

Orange County STEM Initiative

The Orchard Foundation

Overdeck Family Foundation (F)

## P

Penn State University

PhET Interactive Simulations at the University  
of Colorado Boulder

Philadelphia Education Fund

PhysTEC (led by APS, in partnership with AAPT)

PledgeCents Inc.

Project Inspire

Project Lead the Way

Project Tomorrow

Public Impact

Purdue University

## R

Relay Graduate School of Education

Rider University

RoadtripNation.org

Rodel Foundation of Arizona

## S

The Samberg Family Foundation (F)

Samueli Foundation (F)

San Diego Zoo

San Francisco Teacher Residency

The Charles and Lynn Schusterman Family  
Foundation (F)

Science and Mathematics Teacher Imperative  
of the Association of Public and Land-grant  
Universities

Science Foundation Arizona - AZ STEM Network

Science Friday Initiative

ScriptEd

Sesame Workshop

Simons Foundation (F)

Smithsonian Science Education Center

Elsa and Peter Soderberg Charitable  
Foundation (F)

Spelman College

SRI International

Stanford Teacher Education Program

State of Arkansas

State of Colorado

STEMteachersNYC

## T

TEACH

Teach For America

Teach Kentucky

Teacher Education Program at the University of Pennsylvania, Graduate School of Education

Teacher Quality Retention Program at Thurgood Marshall College Fund

The Teaching Channel

Teaching Institute for Excellence in STEM

TeachingWorks

Technology Access Foundation

TED-Ed

Tennessee Department of Education

Texas A&M University

The Texas Tribune

Tiger Woods Learning Center

TNTP

Today's Students Tomorrow's Teachers

Torrance Unified School District

The Tortora Sillcox Family Foundation

Tufts Center for Engineering Education and Outreach

Twin Cities Teacher Collaborative

## U

U.S. Department of Education

U.S. Department of Energy

Uncommon Schools  
University of Arizona STEM Learning Center

University of California System

University of California, Berkeley

University of California, Irvine, Cal Teach  
Science and Mathematics Program

University of California Los Angeles California Teach

University of California, Merced

University of California, San Diego

University of California, Santa Barbara

University of Chicago Urban Education  
Institute and Center for Elementary  
Mathematics and Science Education

University of Colorado Boulder

University of Colorado Colorado Springs

University of Houston - Clear Lake

University of Illinois at Urbana Champaign,  
College of Education

University of Indianapolis

University of Missouri College of Education

University of New Hampshire

University of North Carolina

University of South Carolina

University System of Maryland

University of Texas at Dallas Department of  
Science/Mathematics Education Urban  
Teacher Center

University of Virginia

University of Washington College of Education

Urban Schools Human Capital Academy

Urban Teachers

USC Rossier School of Education

USNY Regents Research Fund

UTeach-The University of Texas Pan American

The UTeach Institute

## V-Z

Virginia Commonwealth University -  
Richmond Teacher Residency

Washington STEM

Washington University

WestEd

Western Governors University

West Virginia University Center for Excellence  
in STEM Education

WGBH Educational Foundation

WNET

The Woodrow Wilson National Fellowship  
Foundation

Xavier University of Louisiana

The Young People's Project

# THANK YOU FOR BEING WITH US ON THIS JOURNEY

As you've seen, 2015 was a year of innovation and progress, as we continued to push the envelope on how a small, nimble "harbor master" can coordinate and amplify the work of 200+ amazing organizations focused on one shared goal. We learned with our partners side-by-side and faced our shared challenges head-on.

In 2016, we look forward to defining the grand challenges that have long made the goal of 100,000 excellent STEM teachers so difficult for this country and using them to drive our work for the back five years of our ten-year goal. To define the challenges, we will continue to engage our partners, along with hundreds of sector leaders and principals, STEM undergraduates who chose to teach and those who opted not to, and of course new and veteran STEM teachers, alongside those who have left teaching. We will activate dozens of scholars and thinkers to help make sense of the root causes of these challenges. And ultimately, the grand challenges framework will guide our work as a hub, pushing ourselves, our partners, and the field at large to confront and tackle those root causes en route to achieving our goal of 100,000 excellent STEM teachers.

We will do all this alongside continuing to inspire best-in-class organizations to join us in this shared effort and to support our now more than 280 partners to succeed at their commitments.

Together we are creating and empowering the next generation of innovators, visionaries, and problem-solvers.

It's an exciting and worthy piece of work. Thank you for being our partners in it.