In 2017, we did three things.

We strengthened the network, mapped the STEM teaching ecosystem, and honed our problem-solving tools.

The result: The 100Kin10 network is activated, laser-focused, and primed to take collective action to solve the highest-leverage challenges facing teaching and STEM today.
Over the past six years, we’ve built a network capable of creating systemic change in education, especially in STEM.

100Kin10 is made up of nearly 280 partners from public, private, and non-profit organizations, all committed to addressing the nation’s shortage of STEM teachers.

Since 2012, we have raised a total of $103 million to support 100Kin10 partners in solving the most pressing challenges in STEM education.

For the sixth year in a row, we’re on track to reach our goal of 100,000 STEM teachers by 2021.

Collaborative problem solving is the core of what we do, and in 2017 we enabled partners to collaborate 214 times.
We are a diverse coalition representing the resources and expertise needed to effect change.
WE ARE EXCEEDING OUR GOALS

For the sixth year in a row, we are on track to reach our goal of 100,000 excellent STEM teachers by 2021. This year was a milestone for 100Kin10, officially surpassing our half-way point of 50,000 teachers. While we still have work to do, we couldn’t be more excited that our big audacious goal is on track to become reality.

ABOVE AND BEYOND

In 2017, we not only reached our projected goal... we exceeded it by 4,000 teachers. If we maintain this pace, we’ll continue to exceed our annual goals for the next four years, as well.
“100Kin10 is the pulse of the nation when it comes to STEM. This is the go-to place for the latest information and challenges facing the field of STEM education.”
$71K
Invested by 100Kin10 in partners to meet up for collaborative work in 2017

$105K
Co-invested by partners in collaborative projects in 2017

$175K
Invested by funders in partners through exclusive competitions in 2017

$967K
Invested by funders in partners through exclusive competitions in 2017

$28M
Pledged by funders in support of the 100Kin10 partners in 2017

100Kin10 helps support our network by investing directly in partners’ work, creating platforms for partners to co-invest in collaborative projects, and convening funders to invest in supporting the network as a whole.
100Kin10 provides opportunities for partners that simply don’t exist anywhere else.

**Opportunities**
Because of 100Kin10, 69% of partners found opportunities to tackle big challenges they could not have taken on alone.

**Expertise**
Because of 100Kin10, 73% of partners accessed expertise or ideas they would not have otherwise encountered.

**Connections**
Because of 100Kin10, 77% of partner organizations connected to other high-quality organizations they would not have worked with otherwise.
As a result, partners have advanced their STEM teaching work and made progress toward bigger goals in ways they couldn’t have without us.

**Direct Impact**

- **30%** 100Kin10 partners adapted another partner’s best practice
- **33%** 100Kin10 partners started a new program from scratch
- **13%** 100Kin10 partners changed an ineffective program

**Knowledge Sharing**
- **74%** of partners shared insights and best practice from their work with others

**Collective Learning**
- **85%** of partners learned something from other partners and 100Kin10 staff

**NET PROMOTER SCORE**
- **31** 100Kin10’s overall average NPS score was 31, quite robust for a nonprofit organization

**Amongst highly engaged partners, 100Kin10 scored 52, an extremely strong score for any organization**
We catalyze support for STEM educators nationwide.

We believe it is our responsibility to be champions of STEM education and build wide-ranging support. We speak, publish, and organize to build the case for why STEM education is crucial for the future of our country, our economy, and our planet.

- WE ORGANIZE AND INSPIRE LEADERS TO ADVOCATE FOR STEM LEARNING
  - We coordinated an “Open Letter” in early 2017 for leaders to publicly affirm their commitment to supporting STEM. 100+ SIGNED ON

- WE SUPPORT STEM TEACHERS TO BE ADVOCATES AND ACTIVISTS
  - We created a toolkit to help teachers organize and prepare for the March for Science. 5K+ DOWNLOADS

- WE RESEARCH, COMPILE, AND SHARE KEY INSIGHTS WITH THE FIELD
  - We published our first annual Trends Report, which synthesized the 10 most important developments in STEM from around the country. 72 HOURS OF RESEARCH

- WE CHAMPION STEM EDUCATION THROUGH ARTICLES AND ADVISING
  - In 2017, our work was celebrated in 15 different publications, including Inc., The Chronicle of Philanthropy, and Huffington Post, and our team was asked to advise dozens of efforts. 15 PUBLICATIONS
In 2017, we created an unprecedented map.

In the winter of 2015, we began our most extensive research to date. We spent 18 months conducting dozens of literature reviews, collecting data from thousands of teachers, interviewing hundreds of stakeholders across the public, private, and nonprofit sectors, and consulting with leading experts across disciplines, all to answer one key question...
ASKING THE QUESTION

Why Is It So Hard To Get and Keep Great Teachers, Especially in STEM?

We isolated the question at the root of it all: Why is there a STEM teacher shortage in the first place? We asked “why” and “why” and “why” again, until we finally hit bedrock -- the root causes.

We identified 104 distinct challenges, shedding light on the array of reasons it’s so hard to get and keep great teachers, especially in STEM. We organized the 104 challenges into 7 major themes, allowing us to see the big picture.

THE THEMES

- PRESTIGE
- TEACHER PREPARATION
- ELEMENTARY STEM
- PROFESSIONAL GROWTH
- TEACHER LEADERSHIP
- VALUE OF SCIENCE, TECH, AND ENGINEERING
- INSTRUCTIONAL MATERIALS
Using Complexity Science to Uncover the Network Structure

To understand how to begin addressing the root causes, 100Kin10 designed an interactive game that 750 teachers and other education experts played to map the connections between all 104 challenges. The result was 35,000 data points that illuminated for the first time the interconnected “network structure” of the challenges facing the STEM teaching ecosystem.
FINDING THE CATALYSTS

03

Pinpointing the Opportunities for Greatest Impact

100Kin10 worked with complexity mapping scientists, who used all 35,000 data points to run simulations of the data over 1,000 times to map all the possible connections between challenges and identify the opportunities for greatest leverage. We found that in each of the seven big themes, there is at least one challenge that has greater potential than others for impact and could create a domino-like effect if solved. We call these the catalysts.

CATALYSTS INCLUDE

- PRESTIGE:
  - Scholarships or loan forgiveness for STEM undergraduates who become STEM teachers.

- TEACHER PREPARATION:
  - Statewide tracking of STEM teacher supply and demand.

- ELEMENTARY STEM:
  - Teacher preparation faculty with specific expertise in elementary STEM.

- PROFESSIONAL GROWTH:
  - The opportunity for teacher collaboration and professional development during the school day.

- TEACHER LEADERSHIP:
  - Accountability systems that promote STEM teacher creativity and school leaders who create positive work environments.

- VALUE OF SCIENCE, TECH, AND ENGINEERING:
  - The number and range of STEM courses required in high schools.

- INSTRUCTIONAL MATERIALS:
  - Districts’ identification of high-quality engineering curriculum.
To better understand the opportunities for systemic change, 100Kin10 commissioned researchers to write white papers on 25 key sub-themes that the map helped illuminate. Those white papers, all made available online for free, succinctly outline what is known, what has worked, and what hasn’t, enabling the STEM field at large to leverage these insights to collectively work toward systemic change.

To more directly put all this new knowledge into action in the network, 100Kin10 asked all 280 partners to identify the challenges they are focused on. We used that information to help build new partnerships and alliances amongst partners working on similar challenges, strengthening the network’s collective capacity to tackle the most pressing problems in STEM education today.
Systems-thinking will transform 100Kin10 into a network with the tools to meaningfully and sustainably improve the STEM education landscape.

100Kin10 created the Grand Challenges website to document the entire process. The website - grandchallenges.100kin10.org is a living resource with a wide array of information and tools to help partners work toward systemic change in STEM education.

The insights gleaned from the Grand Challenges will play a critical role in driving the future strategy and programs of 100Kin10, pulling the entire network towards systems thinking.

Which Grand Challenges will you help solve?

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In 2017, we got better at what we do.

Each year we push ourselves to improve the programs 100Kin10 provides for partners, tweaking, refining, and sometimes even remaking what we do and how we do it.

This year, we continued that trend by developing new ways for partners to collaborate, increasing the opportunities for partners to access resources, and listening to new voices to inform the work that we do.
COLLABORATION GRANTS

These $3,000, quick-turnaround grants gave partners the opportunity to meet in person to explore an idea, brainstorm solutions to a problem, and sketch out a project to advance their practice. Face-to-face meetings provided the critical spark for transforming ideas into action, and the time and space to sit down and collaborate in person.

In 2017

14
Collaboration Grants given to 100Kin10 partners

53
Partners from 29 organizations received grants

$40K
Invested by 100Kin10 in Collaboration Grants

67%
Over two-thirds of recipients reported that six months after completion, the grants were still impacting their organization’s work.

COLLABORATION GRANT TEAMS

University System of Maryland + California State University
Bank Street College of Education + University of California, Berkeley
ExpandED Schools + Lawrence Hall of Science + New Teacher Center
AAPT + AMTA + PhysTEC + Kenan Fellows Program
San Diego Zoo Global + Gulf of Maine Research Institute
New York Academy of Sciences + EnCorps STEM Teacher Program
Math Teachers’ Circle Network + NCTM
Encorps STEM Teacher Program + NAF

George Washington University + Loyola University Chicago
Mary Lou Fulton Teachers College at Arizona State University + Erikson Institute
Teaching Channel + Washington STEM + University of Washington + Exploratorium
Penn State + IgniteED

NET PROMOTER SCORE

75
100Kin10 conducted a five-year survey of collaboration grants, and recipients had a Net Promoter Score of 75.

This is an astronomically high NPS score, higher even than some of the strongest brands in the world, demonstrating the tremendous value these grants provide for partners.
PROJECT TEAMS

Project Teams are small groups of partners that collaborate on time-bound projects to address specific challenges. Project Teams are driven by partners, who choose the focus of their work and self-select to be part of teams, while 100Kin10 provides support through convenings, in-person workshops, targeted expertise, and logistical and other resources to help teams advance their work.

IN 2017

7
Project Teams launched

50
Partners participated in Project Teams

25
Partners are continuing their Project Team work in 2018

Impact Of Project Teams On 2017 Participants

91%
of participants said they want to be Project Team leaders in the future

86%
of participants built new relationships with other 100Kin10 partners

76%
of participants learned something new from another 100Kin10 partner

2017 PROJECT TEAM MEMBERS

Supporting NGSS Implementation In California

Califorina State University, CDE Foundation, Chevron, Lawrence Hall of Science (University of California Berkeley), University of California Los Angeles Teach, KQED, WestEd

Enabling Data-Driven Professional Development

Arizona Science Center, Arizona Science Teachers Association, Center for Science Teaching and Learning (Northern Arizona University), Freeport McMoran Foundation, Maricopa County Education Service Agency, Science Foundation Arizona

Reaching Rural Teachers with STEM Programming

Colorado Education Initiative, Colorado Geographic Alliance, Freeport McMoran Foundation, University of North Carolina: North Carolina School of Science and Mathematics, University of South Carolina, U.S. Department of Energy

Adapting Professional Learning Communities to Rural Areas

Center for Children & Technology at Education Development Center, Inc., Freeport McMoran Foundation, Gulf of Maine Research Institute, Math Teachers’ Circle Network, National Writing Project, University of New Hampshire

Documenting STEM Teacher Education Best Practices

High Tech High, Ingenuity Center at UT Tyler, Teach For America, USC Rossier School of Education, UTeach Institute

Improving Perception of the STEM Teaching Profession

American Association of Physics Teachers, American Chemical Society, Breakthrough Collaborative, Colorado School of Mines / University of Northern Colorado, PhysTEC, TEACH, West Virginia University Center for Excellence in STEM Education, Woodrow Wilson National Fellowship Foundation

Exploring Online Professional Development for Elementary Educators

INSPIRE @ Purdue University, National Center for Technological Literacy at the Museum of Science, Boston, Teach For America, Tufts Center for Engineering Education and Outreach, WNET
TEACHER FORUM

The Teacher Forum launched in 2017 as a means to listen directly to STEM teachers in order to hear first-hand what they need and are experiencing in the classroom. In 2017, 100Kin10 hosted three listening sessions to gather insights and expertise from STEM teachers from around the country and share them with the field.

IN 2017

61 Teacher Forum members signed on
59 Total engagements
547 Views of posts about the Teacher Forum

Outcomes

At the Teacher Forum listening sessions, STEM teachers discussed their thoughts about the school environments, systems, and schedules that enable innovative instruction and teacher collaboration. They shared stories of successful and failed collaborations, identifying the factors that many of them found create a supportive school environment for innovation and experimentation. 100Kin10 distilled four common themes:

“Hearing triumphs and struggles of others and finding commonality in them, I get inspired to do more. More importantly, the opportunities to contribute meaningfully to the profession are fantastic.”
EVERYTHING ELSE

**Unconferences**
Regional partner-directed gatherings that create a platform for in-depth conversations, sharing new ideas, and learning from one another.

*45 individuals from 25 organizations participated in 2017*

**Back-To-School Breakfasts**
Partners find new collaborators, share stories, and dive into collaborative work at annual gatherings in cities around the country.

*166 partners from 88 organizations attended in 2017*

**Networked Improvement Community**
Teams of partners, focused on a single challenge, run experiments, test new approaches, and measure the impact of prototypes as they improve their existing programs.

*50 partners from 26 organizations participated in 2017*

**Funders’ Collaborative**
Funders learn together, exchange ideas, and develop shared grantmaking opportunities, creating unique opportunities for 100Kin10 partners to address systemic challenges in STEM education.

*$28.175 million pledged in 2017*

**Solution Lab**
Through curated workshops, partners explore systemic challenges and develop coordinated solutions, in which they co-invest.

*$105,000 co-invested by 19 partners in 2017*

**Teacher Experimentation Grants**
This funding enables partners to advance new solutions to the challenge of how to empower teachers to experiment in their classrooms.

*$966,847 provided in funding to 5 partner organizations in 2017*

**Fellowship**
Using a human-centered design process, partners work together with experts and peers to focus on one systemic challenge in STEM teaching.

“It was an amazing way to experience outside-of-the-box thinking.”
In 2017, we tried new things and learned from them.

We’re not shy about failure because we know it’s essential to innovation. In 2017, as in every other year, we experimented with how to mobilize a diverse network to learn, improve, and tackle big, shared challenges together. Because we were pushing the envelope, some experiments worked, and some didn’t (yet), and we learned important lessons from each. We’re already incorporating those new insights into the work we do, and we’re proud to share them with you.
LEARNING FROM NEW PROGRAMS

TEACHER FORUM

What We Tried:
Our idea was to listen directly to teachers and learn from their first-hand experience, and then to share that knowledge with our partners to help inform their work.

What We Learned:

- All participants were teacher leaders, so the perspectives we heard were not representative of the average STEM teacher.
- We held virtual “listening sessions” which presented challenges to get participants to engage deeply in rich discussions.
- Participants wanted to be more involved in the problem-solving process, rather than merely reflecting on challenges and sharing broad insights.

What we are doing now:
We’ve redesigned a few key elements of the experience and created Teacher Forum 2.0 in 2018. We leveraged our network to reach a broader and more representative sample of STEM teachers, provide more action-oriented work for participants, and are exploring ways to capture the insights from in-person conversations that are already happening amongst STEM teachers at schools around the country.

PROJECT TEAMS

What We Tried:
We tested taking a hands-off approach to supporting Project Teams - giving team leaders full authority in structuring and carrying out their project work while we assisted with logistics as needed.

What We Learned:

- We learned that many Project Team leaders were hungry for best practices on how to architect their projects.
- Developing project timelines took up unnecessary time and effort for team leaders, too often diverting attention away from the core project work.

What we are doing now:
Coaching team leaders to be stronger facilitators and recognize opportunities where 100Kin10 can step in to help support their team. Sharing best practices for project structure and methodologies with teams and holding monthly check-in meetings with leaders. Scheduling two in-person Project Team meetings for the entire cohort at the same time (and in the same place) to reduce the logistical burden or organizing multiple independent meetings for each team.

GOALS PROJECT

What We Tried:
We tested a new response to partners’ demand for continued light-touch engagement after events by asking attendees at Back-to-School Breakfasts to set goals for the coming school year, and then connected partners with similar goals to form small groups. We followed up with group emails to connect partners via phone calls, and offered resources such as grants and toolkits to help spur collaborative action.

What We Learned:

- Only 20 out of 63 partners followed through with their initial request to connect with like-focused partners.
- Partners were interested in connecting with people working on similar goals, but there was not a strong demand for ongoing engagement after the initial introduction.

What we are doing now:
Forming a new hypothesis about what partners want and what makes for the most meaningful connection based on follow-up interviews with participants. We are redesigning this offering by experimenting with how to invite partners to participate in ways that more accurately address how they want to engage.
STRATEGIC ADVISORY

In late 2016, we started experimenting with a strategic advisory group to infuse perspectives from a powerful, smart, diverse group of thinkers and leaders to help guide the next phase of 100Kin10’s growth and development. During this inaugural year, advisors contributed expert insights and helped us make progress on answering ten questions at the core of our work.

WHAT WE LEARNED

1. Engage STEM teachers to contribute to the 100,000 goal?
2. Identify a new north star to guide our work past the 100,000?
3. Engage with policy in a changing environment?
4. Use learning to help partners reach their commitments and advance the field?
5. Tell the story of the Grand Challenges?
6. Reimagine 100Kin10 partner commitments?
7. Use strategic communications to reach our goals?
8. Maximize network value for lightly-engaged partners?
9. Apply the Grand Challenges approach at the regional level?
10. Integrate funders as collaborators in the network?

THANKS TO OUR ADVISORS

Meghan Amrofell, Maureen Bisognano, Blair Blackwell, Jake Bryant, Becky Crowe, Richard Culatta, Nadya Dabby, John Deasy, Jean Desravines, Susan Ditkoff, Bob Floden, Mo Fong, Lance Fors, Kumar Garg, Grant Garrison, Karen Hawley-Miles, Scott Heimlich, Kristin Kearns-Jordan, Grace Kim, Sue Lehmann, Anu Malipatil, Tonya Matthews, Jeff Milbourne, Ellen Moir, Sonya Pryor-Jones, Kartik Raghavan, Alex Reeves, Gerard Robinson, Laura Samberg, Sam Seidel, Jim Short, Sandy Speicher, LaVerne Evans Srinivasan, Marla Ucelli-Kashyap, Joanne Weiss, Joey Wilson, Connie Yowell

THE NUMBERS

37 Advisors
2 New Tools Created
110 Collective Hours Contributed
3 New Strategies Developed
58 Session Engagements
2 New Strategies Developed

This year, we asked how we might...
LEARNING FROM YOU

We are the sum of our parts, and we constantly learn from each and every one of you. With an activated network, a map of the entire STEM ecosystem, and tools to mobilize collective problem solving, we can transform the future of our country.

In 2018, what will you teach, what will you learn, and how will you uniquely contribute?