Q&A with Talia Milgrom-Elcott

Interviewed by Susan Straight

This is Susan Straight, editor of *Dimensions* magazine. I'm here today with Talia Milgrom-Elcott, founder of 100Kin10, the network devoted to tackling systemic challenges and getting 100,000 excellent STEM teachers into classrooms nationwide.

After graduating magna cum laude from Harvard Law School, Milgrom-Elcott decided not to practice law and instead focused on educational change. She worked at the New York City Department of Education and as a program officer and senior manager of STEM teacher initiatives at the Carnegie Corporation of New York. In January 2011, she founded 100Kin10, a network with the goal of increasing the number of STEM teachers in America's classrooms, and she currently serves as its executive director.

You founded 100Kin10 in January 2011 on the day after President Obama's State of the Union in which he called for 100,000 new STEM teachers in 10 years. Where are you, at the moment, in terms of reaching that goal?

We are just about eight years in and, as of our seventh year in, our network of more than 300 leading organizations has prepared more than 68,000 new and excellent STEM teachers for the country's schools and classrooms, and that's trending a good 5 to 10% ahead of our target—which we have been for last few years.

That's fantastic. How can science centers and science museums help 100Kin10 to achieve this goal?

From the very first moments of 100Kin10, in that day after the State of the Union in 2011, we've had science centers as partners, and see them as integral components of an all-hands-on-deck strategy to get to this goal. Science centers and museums and other science-rich institutions are incredible places of exploration, of connecting to curiosity, relevance, inquiry of project-based or hands-on learning and collaboration, all-around STEM. Science centers and museums have been making commitments that they can uniquely contribute to this shared goal from the beginning.

We have some incredible science centers and museums that are directly preparing more and new teachers on the front end, in some cases partnering with institutions of higher education or other credentialing authorities to

provide hands-on, exploratory preparation for those teachers from the get-go. Most of our science centers and museums are also supporting existing teachers with professional development to help to revive their commitment to STEM, to deepen their capacity for integrated or hands-on learning, and to provide a refresher on the newest approaches to holistic and joyful STEM education.

In addition to all of that, our science centers and museums tend to be our hosts for our in-person gatherings because they are places where the love of STEM comes to life. The Intrepid Sea, Air & Space Museum and the Museum of Science and Industry have been hosts in the past. The Carnegie Science Center is hosting our national summit in this coming spring and the San Diego Zoo hosted us last year.

That's great. What have been some unexpected challenges along the way?

That's a great question. We started this network in order to get to 100,000 excellent STEM teachers in 10 years and, when we hit our five-year mark, we realized that we were on track to hit this goal on time and, like I mentioned, began to trend ahead. That was even in the face of historic shortages in teacher preparation programs that this network was outperforming not only its own targets but national expectations. That moon that we were shooting for was in sight for the first time and we should've been celebrating, but what we realized is that, even if we got to this audacious goal of 100,000 excellent STEM teachers in 10 years, if we didn't understand and address the underlying reasons for this chronic STEM teacher shortage, we'd be needing to run 100Kin10 in endless 10-year cycles of 100,000 more teachers and then 100,000 more again. It would still be too hard to recruit and prepare those excellent STEM teachers and it would be too hard, once they joined the profession, to keep them there where they could authentically grow and thrive in the profession.

So, we set out, with the network, to understand all the reasons for the STEM teacher shortage, because you can't solve a problem you don't understand. With the network, we were uniquely in a position to hear from every perspective. Once we identified the many reasons why there's a STEM teacher shortage, we found a few of the highest-leverage places to work. The network, ever since then, has been focused on solving those highest-leverage challenges or opportunities and working together to make more systemic change in addition to getting to the 100,000 and continuing to improve day-to-day processes.

In terms of not just bringing teachers into the STEM field but also trying to retain great teachers, what are some specific examples and success stories?

You're asking a great question, which is at the core of that mapping work and of the commitment that organizations have been making to the 100Kin10 goal from the beginning—it's not just enough to bring in great new folks into the profession if we watch too many of them fall out as if through a sieve. From the beginning, about a third of all the commitments made to this goal were made to retain great teachers, to help more of them to improve and to stay longer so they can keep affecting students and improving students' lives. Our science centers and museums are among the leading organizations making these "retain and improve" commitments. I'll just share a few examples.

The Museum of Science and Industry is working with over 600 elementary and middle school teachers to help strengthen their science capacity, but they're also working with 75 schools to create leadership opportunities for schoolwide science programming for teachers and administrators. So, you see this more systemic approach to not just increasing the individual teacher's capacity, but really thinking about the schools in which teachers go to work and students go to learn every day.

Then we have Intrepid Sea, Air & Space Museum, which I mentioned earlier, and they're working with about 2,000 preservice teachers and in-service teachers, trying to create the capacity at the front end to walk into schools and thrive and then to support people to continue to grow, really thinking about inquiry-based science teaching opportunities.

One last example: at Carnegie Science Center, hosting our national gathering and ASTC's national gathering this coming year, they are thinking about how do you prepare teachers at the front end so that they're likely to stay and to thrive and, once they're in school, how do we create pathways for teachers to continue to grow so that they don't find that growth means they have to leave the classroom. We want experienced, committed teachers who have gained expertise over the long term to be teaching our kids.

These are just a few examples of ways that our partners are doing that. We've seen a focused look at preparing teachers so they don't need as much professional development afterward to be able to feel supported and thriving in the classroom and then to provide that ongoing professional growth that all professionals crave.

Great. Thank you, Talia. Thank you so much for your work and thank you for talking with us today.

It was such a pleasure. Thanks for all the amazing work you are doing to support science-rich institutions across the country to serve their communities and, as a big part of that, to serve their schools, their teachers, their students, and to really break down that fourth wall between informal and formal, between standards and inquiry, joy, and authenticity in all of learning. It's what we hope for all our kids. It's an amazing thing to get to partner with you.