

History of the New Jersey STEM Innovation Fellowship

The New Jersey STEM Innovation Fellowship is based on Math for America's (MfA) proven teacher fellowship program in New York City. In the MfA model (see Figure 1), outstanding teachers are selected for fellowships through a rigorous application process. During the fellowship these teachers meet, outside of school hours, to explore innovative teaching practices that enhance student learning. They implement new practices in their classrooms, build capacity to improve student learning outcomes, and ultimately encourage their peers to do the same.

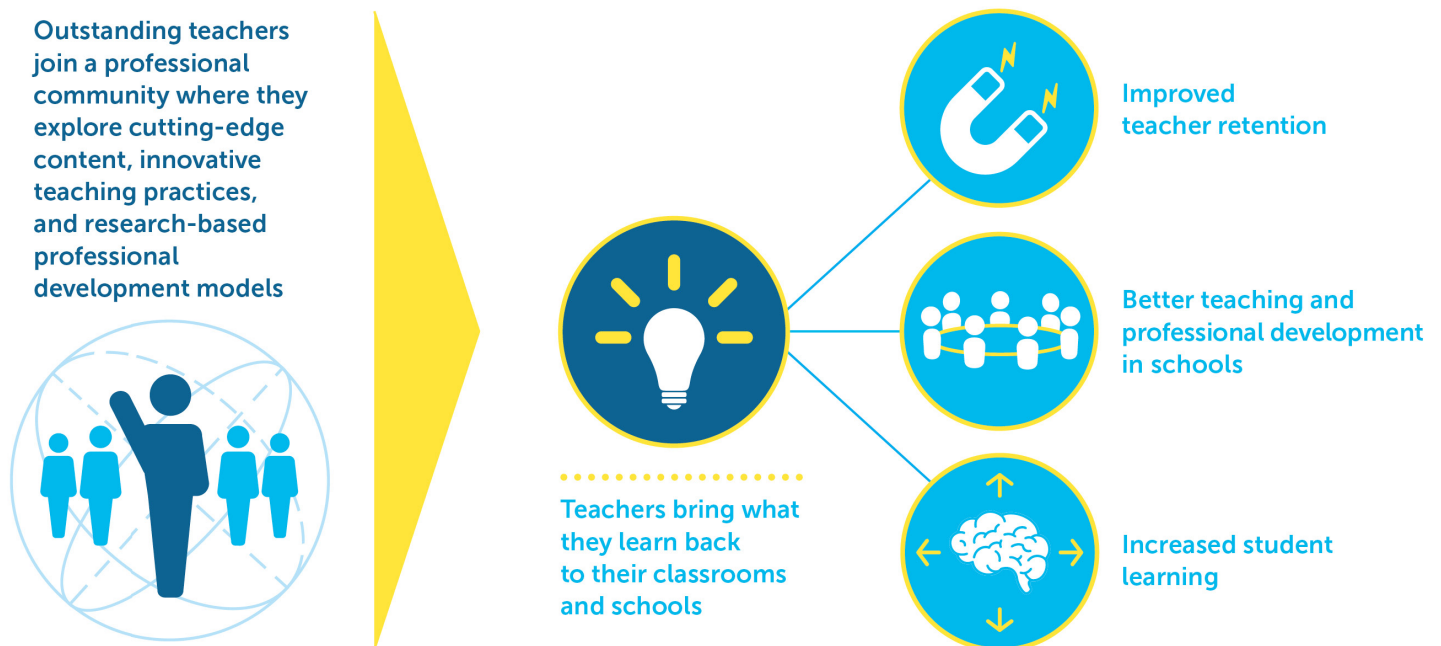


Figure 1: MfA's program model graphic.

MfA tailored the new program to fit New Jersey's specific needs and advance Governor Phil Murphy's education agenda. After consulting with the New Jersey Department of Education (NJDOE), MfA determined that the pilot year would focus on strengthening elementary math education through the use of a teaching practice called "number strings." Number strings have been shown to significantly improve learning outcomes in elementary math. MfA built support for the new initiative with the help of JerseyCAN, an advocacy group that focuses on equitable learning opportunities in STEM. Several corporate and family foundations joined together to fund a pilot program, including the Overdeck Family Foundation, PSEG Foundation, Celgene, BD, the Maher Charitable Foundation, and ADP. The program is administered by a university partnership led by Montclair State University and includes Princeton and Rowan Universities.

After Governor Murphy announced the program in January 2019, MfA promoted the new initiative with the help of key stakeholders such as NJDOE, the New Jersey Education Association, the New Jersey School Boards Association, the New Jersey Principals and Supervisors Association. The program received five applications for each available space. 30 teachers were ultimately selected, representing 20 districts and 29 schools. 50 percent of these teachers work in schools where more than 60% of students receive free and reduced lunch.

While the COVID-19 pandemic challenged the program and made some of the original goals difficult, the program was able to pivot to respond to the pandemic by considering how to use technology to (1) provide meaningful learning experiences for teachers and (2) help students learn math at a distance. For the teachers, all professional development transitioned to a virtual setting, including the summer institute for year 2. This move to connecting remotely was very successful, as teachers continued to feel supported both personally and professionally.

"This community was especially helpful when the pandemic hit. We were all feeling discouraged and upset about the state of teaching when we had our first ZOOM meeting. We were challenged by [regional site leader] to use a number string somewhere online with our students. I decided to use one on a Google Meet while projecting a digital rekenrek. My students were ecstatic and instantly it felt like we were a community again. The concept that was foreign to us at the beginning of the year became the commonality that kept our classroom culture while the world moved to digital learning. It was an amazing experience, and many of our cohort shared the same ideas the following meeting. Every teacher seemed a lot happier and more at ease with distance learning after using strings online with their kids."

The online PD also provided an opportunity for teachers to be introduced to various technologies to use with their own students. Teachers were very positive about this experience, as evident from the final reflection survey after the summer institute:

"Thank you again for this amazing opportunity. Like many teachers I have been feeling anxious and stressed about what this year looks like. These two days have reenergized me (as did all the PLC meetings throughout last year!). It is a really great feeling to work with a group of educators who are so passionate about student learning. It is so valuable to have a place to take risks, reflect, and grow! THANK YOU!"

"This was a great way of interacting and learning at the same time. I know that we like the in-person PD, but these two days felt that the group came together and had opportunities to interact without being in the same place. Well done!"

The goal is to continue to cultivate support for a private-public partnership that is in part funded by the state. By focusing on building capacity for innovation in remote-teaching environments, the New Jersey STEM Innovation Fellowship will continue to support the governor's agenda and NJDOE efforts to promote a successful shift to remote and hybrid instruction.