

## STEM Thoughts

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# STEM Learning Ecosystems Blog

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**Learn more about what's happening in our STEM Learning Ecosystems across the country.**

### **Now is the Moment to Disrupt the College Admissions Process**

#### **Here Are Some Ideas Curated by the STEM PUSH Network**

The world of college admissions is under the national microscope in a way that it has never been examined before.

With scandals involving celebrities using their wealth and influence to gain access for their children, to COVID-19 pausing standardized testing, there has never been a better time to work for systemic change in the college admissions process.

The STEM PUSH Network (Pathways for Underrepresented Students to Higher Education Network) is working to transform the admissions process by providing an alternative, evidenced-based metric that gives real weight to out-of-school time, pre-college STEM programs in admissions decisions.

Through communications, advocacy, and hands-on work with pre-college STEM programs and other community-based partners, the STEM PUSH Network is raising awareness of existing inequities and providing tangible pathways for ushering lasting change. Read more about the work of the STEM PUSH Network and watch an introductory video [here](#).

The work in front of us is daunting. Changing traditions, interrogating values and assumptions and disrupting what has become so entrenched will take time, courage, and resolve.

***“Higher ed is both really successful in this country, but also really immune to change and unregulated from our federal government policy perspective.” - Eric Waldo,***

## ***Executive Director of Reach Higher, VP for Access and Equity, Common App***

We are determined. In addition to our work to create an evidence-based alternative admissions metric, we have already sparked meaningful conversations with national admissions experts and developed action plans for what you can do now to join the movement for change.

The following set of action steps have been compiled from a series of conversations with STEM PUSH Network leaders as well as national college admissions experts.

1. **Shift the conversation.** Move the conversation beyond standardized tests and start talking about work students do that shows their abilities far more than what can be measured on standardized tests.

Recognize that standardized tests measure only a narrow set of skills, while you may work with students on projects or initiatives that go far beyond just that slice of valued outcomes. Don't be afraid to discuss and promote your work and initiatives and how they engage students.

1. **Recognize inherent, legacy and hidden bias.** Narrow measures of students' abilities will likely be fraught with deep bias. Be committed to understanding this and taking initiative to change what could be "legacy" bias that has carried over from previous times. This legacy bias, which could be ingrained in processes and procedures, may no longer represent the institution's intent.
2. **Interrogate assumptions, criteria and questions.** The assumptions that have been used to build the questions for how students are admitted to college likely contain bias that will disadvantage certain groups of people. Do not be afraid to question the question and suggest different ways of thinking about what matters for college admissions and how those qualities might be measured. At the same time, it is critical for institutions to consider what they are trying to achieve in building their freshman class. Questions about what the freshman class should look like, be able to do and what knowledge, skills and dispositions are necessary for this.
3. **Work in your sphere of influence.** Be sure to exercise your influence in the areas where you operate. Identify where your voice and thoughts will carry immediate weight and be sure to speak loudly and often.
4. **Use research and data.** Use research, data, curiosity and intellectual rigor to poke holes in assumptions and demonstrate how racism is baked into traditional college admissions processes. The data will put you in a powerful position to dispel myths that are so rife about how minoritized students perform in college and about the process of college admissions itself.
5. **Follow the conversation.** Join the STEM PUSH Network by following us on [LinkedIn](#) and [Twitter](#).

Ean Smith, Jason Pernick and Mike Premozic, Penn-Trafford High School students, participate in a VEX Robotics competition Dec. 6.

**As with all sectors of society, the education world has been upended and we are all searching for ways to make sense of what is, what was and what will be.**

The pandemic, the postponement of college board tests and the growing trend of test results becoming optional for college admissions presents a unique opportunity to reevaluate the entire

college admissions process.

Members of the [STEM Pathways for Underrepresented Students to Higher Education \(PUSH\) Network](#), a National Science Foundation INCLUDES Alliance, believe this is a critical time to address longstanding and inequitable college admissions practices and processes that have prevented Black and brown students in particular from accessing and thriving in STEM pathways.

We urge institutions of higher education to seriously address these questions:

What defines students' abilities to be successful in college?

What sets of experiences best predict that success?

What are the characteristics of successful college students?

How are issues of race and equity addressed in the admissions process?

As part of the response there must be an emphasis on [Out of School Time](#) programs, including pre-college STEM programs. Pre-college STEM programs have long provided powerful learning experiences for thousands of students across the United States, from researching genomes to building robots to exploring river ecosystems.

Unfortunately, these programs have not been leveraged to support broadening participation of minority students who are underrepresented in STEM fields. The underuse of pre-college STEM programs extends to their untapped potential to contribute to more nuanced and equitable college admissions processes.

The STEM PUSH Network, which is supported by a diverse group of collaborators and thought partners, brings together pre-college STEM programs from across the country to work on strengthening programming for racially and ethnically underrepresented students, and on reinventing the relationship between pre-college STEM programs and higher education admissions toward more equitable pathways into undergraduate STEM fields.

The STEM PUSH Network believes that its findings will demonstrate the power of STEM experiences, like pre-college STEM programs. The network is working with STEM pre-college programs to both strengthen and better evaluate such programs, as well as connect to college admissions practices to better understand the value of such programming and test out ways to systematically communicate students' STEM competencies to admissions. This data will both strengthen and measure the effect that participation in pre-college STEM programs is having on high school students, while working to give those programs currency in the college admissions process. Pre-college STEM programs across the country have data supporting the positive impact of their work on young people's STEM knowledge, skills and dispositions. We can also listen to the powerful narratives from students who have participated in pre-college STEM programs.

Consider this story: Terrell Galloway of Pittsburgh finished his eighth-grade year unsure of anything other than he wanted to spend his summer with friends and did not want to do more school. However, Galloway relented to his mother's desire for him to enter [INVESTING NOW](#), a pre-college STEM program at the University of Pittsburgh. He then spent his high school summers learning about robotics and computational fluid dynamics, and realizing that there really is such a thing as a "Black engineer."

His high school pre-college STEM experiences helped him land summer internships, including one on a naval submarine. Four years later, he was a year away from graduating with a degree in mechanical engineering and evaluating where he would like to work when he graduates in spring 2021.

He and a group of friends he met in his pre-college STEM program formed a mentoring organization, [Future Kings](#), for other young men of color from his hometown, helping advise them about college and career choices.

Galloway said his experience with his pre-college STEM program changed the trajectory of his entire life and opened up options he never knew existed. “As a ninth-grader in high school, I had never seen a Black engineer. I did not even know they existed, but it was really hard for me to think that was obtainable for myself since I had never seen it.”

Galloway is not alone. There are thousands of minority students across the country who have had meaningful pre-college STEM program experiences, and yet the knowledge and skills they have acquired through their work with pre-college STEM programs and their tangible accomplishments are undervalued in the college admissions process.

It is time to change that.

### **Ecosystems are ready to support school districts as they reimagine school**

Cleveland Metropolitan School District Chief Executive Officer Eric Gordon Monday told members of U.S. Congress that the inequities in Cleveland that were magnified by the COVID-19 pandemic existed long before anyone had ever heard of the disease.

The scourge of generational poverty and racism have long plagued Cleveland and Gordon urged members of Congress to join him and other leaders in addressing them.

Testifying before the U.S. Committee on Education and Labor, Gordon said, “All COVID-19 did was to starkly expose them for all to see. And the evidence is clear that these inequities are most acute in communities of color,” Gordon said. “If we have learned anything in Cleveland, it is that from crisis comes opportunity. I believe COVID-19 presents an opportunity for all of us to finally address long standing inequities and, in my community, I am working aggressively to do so.”

[Read Gordon's full statement here.](#)

**The WIR'ED project, led by NEOSTEM, aims to strengthen local communities by enabling marketing and technology access to small business owners. Bringing together local businesses, high school students, and marketing professionals, WIR'ED's pilot project focused on the Old Brooklyn neighborhood of Cleveland where many brick and mortar stores were strongly affected by COVID crisis. Student Mira Getrost describes her experience in the article below.**

I have lived in Old Brooklyn for nearly a decade, and the hairdressers, grocers, and restaurants that line the streets are a familiar sight to me. I never thought twice about a lot of these places, driving past them and considering them part of the scenery. Now, however, with the new Coronavirus pandemic, I've noticed a lot of these businesses closing doors, shutting windows, and stopping allowing customers in. While obviously everyone is hard hit by the new economic reality, small businesses are often hit the hardest. That's one of the reasons why I was excited to work

with the WIR'ED project, so I could help a lot of these businesses transition into online space to help them get through the pandemic.

*"[The goals of WIR'ED are for] students to have meaningful experiences and business owners to improve their online presence." -Alyssa Briggs, Director of NeoSTEM*

In March 2020 as most of the world shut down, the WIR'ED project was just getting started. With their in-person clientele severely dwindling, the only way local businesses would survive would be through adapting to online services, but many either did not have access or did not know how to adjust. The tech gap in businesses was not caused by COVID, however, the pandemic only made matters harder for business owners, many of whom did not know how or were unable to apply for resources and funds that could help them through this difficult time.

One of the leads on the project that I talked to, Jayme Bauer of the [Old Brooklyn Community Development Corporation](#) described it as "heartbreaking and frankly unjust," to see many of these businesses struggle to get funding that they deserved due to technology gaps.

As a result of these issues and in a hope to both educate students and help business owners, the WIR'ED project sprung up. The project's goals are simple but valuable: to help business owners while empowering and teaching students.

Alyssa Briggs, director of the [NeoSTEM](#) Ecosystem, said the goals of the project are for "Students to have meaningful experiences and business owners to improve their online presence."

In addition, the match between the students and business owners made sense. While many small businesses are run by owners who might not be familiar with new technology, working online and with social media is something many teenagers excel at. One of the easiest and simplest steps a business can take to increase profit and customers is to make sure it has a viable online presence, and that's where students come in.

Working with marketing professionals, supervisors, and business owners, students drafted and executed a plan to help small businesses, including increasing their online presence, selling ability, marketing, and social media. Some steps are as simple as creating a Facebook page, while others are much more involved and entail revamping an entire website. However, each business owner received a personal work plan tailored to them and a team willing to help every step of the way.

*"Make[ing] sure that the participating students feel empowered, feel heard, taken care of, and feel that their participation made a difference for themselves and for the business owners." — Jayme Lucas Bauer, Old Brooklyn CDC*

I am not working with one specific business, instead, I am working between them to help with anything that the student assigned to the business needed or to aid with any overall project goals. While doing this, I got to sit in on many Zoom calls organizing the plan of action for these businesses. The steps taken and goals were similar: increase customers, help online sales, make sure people know they're still open for business. The way in which this worked for each business, however, was vastly different.

I got to see [Legoheadz](#), a barbershop deeply embedded in the Old Brooklyn community who wanted to expand their clientele, [Something Fishy](#), an aquarium retailer interested in updating

their website, and Grever Mower Marine Sales Service, a lawn mowing company looking to expand its online presence.

### **WIR'ED Participating Businesses**

- [Atika Styles](#)
- Grever Mower Marine Sales Service
- [KCC Catering](#)
- [Legoheadz Barber Saloon](#)
- [Magickly Natural](#)
- [Something Fishy](#)
- [Vance's Barber & Grooming Lounge](#)

Each of the businesses I saw had their own unique story, mission, and challenges that needed to be addressed, and each team working with them responded accordingly. Students drafted unique plans of action for each business and worked closely with the owners to form an individualized approach to how to help them through the pandemic. These individualized plans not only helped the businesses get the best help students could offer but allowed program participants to develop relationships with these businesses they might not otherwise have thought about.

Jayne said one of the most important things about the project was that it “helped OBCDC create deeper relationships with these businesses, that we hope will be long-lasting and productive,” allowing not only intrapersonal ties but greater community engagement and involvement. This engagement helped students to express businesses’ needs, as one of the best qualities many of these businesses have is one that is extremely hard to replicate: authenticity.

Small businesses have a way of creating a community around them and sharing their message that no chain could hope to imitate, and it’s this quality that students had to find a way to bring over into the digital space. By engaging and actually looking into their message students were able to bring many of these businesses into the digital space without losing the community feel they had.

The people being helped weren’t just businesses, however. A second important aspect of the project was to help students develop skills they could use in the real world. Jayme described this goal as “Make[ing] sure that the participating students feel empowered, feel heard, taken care of, and feel that their participation made a difference for themselves and for the business owners,” which can be a tall ask but one more easily achieved through the hands-on learning that the program provides.

I can’t speak for anyone else on the project, but I know that it has challenged me and forced me to develop skills I would not have otherwise used. Sitting in on marketing meetings with everyone required me to keep track of the schedule and coordinate when I was free. To write this blog post I had to learn how to research this project and find out what its mission is.

I worked online to figure out how to use WordPress and other online tools in order to help people with websites and other online material, and much more. All of these skills are ones I would not have developed through any other program, and ones that I’m sure will stick with me beyond the end of this one. I know other students had to develop leadership skills and organizational tactics to manage helping a business, getting on Zoom calls, and drafting plans. While businesses gained valuable help with online technology, students equally gained new knowledge in how to organize,

lead, and what it actually takes for these owners to run a business.

As a result of this project, I've begun to look at some of the businesses I pass on the streets of Old Brooklyn a different way. I've come to appreciate the vibrant community we have supported by a wealth of different people. The familiar shops I'm used to passing on the street now serve not as a background but a colorful collage, and I'm reminded of the unique stories of a lot of the businesses I've helped work with on this project.

Author, Mira Getrost, is a high school junior attending Hawken Upper School.

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The pandemic, the postponement of college board tests, and the growing trend of test results becoming optional for college admissions presents a unique opportunity to re-evaluate the entire college admissions process. As members of the STEM Pathways for Underrepresented Students to Higher Education (PUSH) Network, a National Science Foundation INCLUDES Alliance, we believe this is a critical time to address longstanding and inequitable college admissions practices and processes that have prevented Black and Brown students in particular from accessing and thriving in STEM pathways.

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These are some of the issues that we believe must be explored, and as part of the response, there must be an emphasis on Out-of-School Time programs, including pre-college STEM programs. Pre-college STEM programs have long provided powerful learning experiences for thousands of students across the United States, from researching genomes to building robots to exploring river ecosystems.

Unfortunately, these programs have not been systematically leveraged to support broadening participation of racially and ethnically minoritized students who are underrepresented in STEM fields. The underuse of pre-college STEM programs extends to their untapped potential to contribute to more nuanced and equitable college admissions processes. These programs have not been systematically leveraged to support broadening participation of racially and ethnically minoritized students who are underrepresented in STEM fields.

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The work of the network is to test out ways to systematically communicate students' STEM competencies to admissions. This data will both strengthen and measure the effect that participation in Pre-college STEM programs is having on high school students, while working to give those programs currency in the college admissions process. Pre-college STEM programs across the country have data supporting the positive impact of their work on young people's STEM knowledge, skills and dispositions. We can also listen to the very powerful narratives from students who have participated in pre-college STEM programs.

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However, Galloway relented to his mother's desire for him to enter [INVESTING NOW](#) a pre-college STEM program at the University of Pittsburgh, in the Swanson School of Engineering. He then spent his high school summers learning about robotics, computational fluid dynamics and realizing that there really is such a thing as a "Black engineer."

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It is time to change that.

It's hard to believe that just a few short weeks ago all 89 communities of the STEM Learning Ecosystems Community of Practice were together for our bi-annual Convening in San Antonio, Texas.

Together, in March 2020, STEM Ecosystems gathered to learn more about how to best enable



tomorrow's problem solvers as key for our shared prosperity. With a convening focus on invention, innovation and entrepreneurship, STEM Ecosystems looked at how to develop pathways towards careers that leverage their passions and solve some of our world's greatest challenges.

During this convening, we heard from many young people about their perspectives and even about some inventions that had created themselves. No one in the audience could forget San Antonio 9th grader Emmet Decker and his enthusiasm for learning.

We asked Emmett to join us virtually to give us his thoughts at this time. Here's what Emmett had to say.

[First, Emmett gave us his take on COVID-19.](#)

[Then, we asked Emmett what he was doing for fun during the pandemic.](#)

**Emmett Decker** is a 9th grade student at NEISD STEM Academy in San Antonio Texas. His interest and passion have always been in engineering. His experience is in engineering concepts, robotics, team building, leading group discussions, and conducting presentations.

Dale Robinson Anglin

*By Dale Robinson Anglin, Program Director, Youth, Health & Human Services, Cleveland Foundation*

The COVID-19 pandemic has upended life as we know it here in the U.S. As a longtime advocate for STEM/STEAM learning, I am proud to see our doctors, nurses, data analysts, scientists, IT professionals and so many other STEM practitioners stepping up as essential leaders and heroes in the fight. As a program director at the Cleveland Foundation, I am heartened to see our community stepping up to support one another, especially our most vulnerable residents, in this challenging moment.

Community foundations, including the Cleveland Foundation, have historically supported their communities in times of crisis, and to address the current pandemic, many have launched collaborative relief funds. So far, more than \$356.5 million has been mobilized by nearly 250 community foundations, and more than \$54.8 million in grants have been announced. You can learn more about how the community foundation field is stepping up [here](#).

In Northeast Ohio, foundations, corporations, public agencies, and individuals came together to launch the **Greater Cleveland COVID-19 Rapid Response Fund**, an emergency fund designed to complement the work of public officials and expand capacity of frontline nonprofit organizations in Cuyahoga, Lake and Geauga counties. Since the fund's launch on March 18, more than \$6 million has been raised, and a total of \$1.68 million has been awarded to 21 nonprofit organizations. We encourage all to join us by making a gift of any amount to the Rapid Response Fund online at [www.ClevelandFoundation.org/Response](http://www.ClevelandFoundation.org/Response).

In addition to our support for the Rapid Response Fund, the Cleveland Foundation has also authorized emergency funding to support a significant portion of a clinical trial – led by University Hospitals in partnership with Case Western Reserve University, MetroHealth and Summa Health – to assess whether the investigational drug ARMS-I helps prevent airborne transmission of coronavirus and whether it reduces the symptoms of healthcare providers who have tested positive for the virus. With the funding coming from previously restricted health-related research

grant dollars at the foundation, our support for the clinical trial reinforces our commitment to all the compassionate individuals who work on the frontlines every day in service of our most vulnerable residents.

Unfortunately, the pandemic's public health and economic crisis has also exacerbated the digital divide crisis. A great article on the issue can be found [here](#). In Cleveland, where we have the highest poverty rate for children in the country, almost half our K-12 students do not have computers and equal numbers don't have consistent connectivity. With the focus on meeting basic needs, should connectivity be considered a "basic need"? I suggest STEM/STEAM proponents have an opportunity and a mandate to work within your communities to highlight how important connectivity is to students' academic and social emotional success during the crisis.

Philanthropic dollars are only a drop in the bucket compared to the government dollars that must be deployed to address this crisis, but every dollar counts when the needs are this great. We all have a role to play in helping our communities respond to the COVID-19 pandemic. As we prioritize the most urgent basic needs right now, we must also keep an eye on the horizon, understanding that this recovery will be wide-ranging and relatively long-term. No donation or act of service is too small. While social distancing keeps many of us apart, it need not impact our sense of community. We must stay engaged and do what we can to help our neighbors - the only way we can get through this is together.

Dr. Calvin Mackie

**By Dr. Calvin Mackie, STEM NOLA**

Do you remember where you were on September 11, 2001?

Do you remember the horrific images of the aftermath of Hurricane Katrina in 2005?

Do you remember the Banking crisis in 2008?

Everyone suffers from storms that come into their lives. No one is immune from bad days, or months, or sometimes, years.

Presently, America as a whole is experiencing an unprecedented storm. The Coronavirus pandemic poses an existential danger and is threatening to destroy our way of life.

More than 100 million people have been ordered by states to shelter in place. The financial markets are crashing. Trillions of dollars have disappeared. Millions of people are filing for unemployment benefits. People fear losing their homes and jobs. Fifty three million kids and countless teachers are home-bound due to school closures.

Sometimes, we look at the dark clouds of a storm and it seems as if they linger forever. The clouds and the rain seem like they will never end; however, the best thing we can do during times of trouble is remember that the storms never lasted.

**"This too shall pass."**

If I didn't already understand my grandma's favorite proverb, "This Too Shall Pass," the events of Hurricane Katrina made it crystal clear for me. There have been times in my life that have been very difficult for me, but nothing would compare to the financial, physical and psychological burden that mother nature imposed on my community.

Beginning in 2005, the people of New Orleans took one gut punch after another. First, the hurricane. Then the flood. The government's slow response, the loss of homes, lives, investments and our way of life.

Years later, after the cameras had departed and the nation seemed to move on, the people of New Orleans -my people, me - were rebuilding our lives and city.

The impact of Hurricane Katrina passed because we never lost hope that it would pass and life would go on.

**Hope is that little voice in your head that whispers "yes," when the entire world is screaming "no."**

After Hurricane Katrina, I lost a tenured professorship in the School of Engineering at Tulane University, when the president of the university decided to keep the football team and eliminate the engineering program.

In March 2006, I lost my dad and stepmother six days apart when neither of them could receive the medical treatment they deserved in the challenged healthcare system of New Orleans.

My childhood community, including my church, were destroyed by the hurricane.

The aftermath of Hurricane Katrina gave me hope and three things that are important for us to consider during this global health crisis.

**1. HOPE helped me find my Purpose and Passion. Use this time to look within and discover your purpose and passion**

*"A passion is not friendly. It is arrogant, superbly contemptuous of all what is not itself, and, as the very definition of passion implies the impulse to freedom, it has a mighty intimidating power. It contains a challenge. It contains an unspeakable hope."*

*- James Baldwin*

The loss of my tenured faculty position at Tulane University was extremely difficult. For 11 years, I worked long hours writing numerous proposals, journal articles and conference papers. I spent numerous late nights grading papers and preparing lectures.

At the most challenging moment in my life - when my community and childhood home were underwater and faculty members were displaced from their homes - Tulane University made the decision to shutter the entire engineering program, thus firing more than 60 faculty members. I was shocked and utterly upset. My entire world was turned upside down!

This event caused me to found STEM NOLA, a community-based 501(c)3 nonprofit, to expose, inspire and engage communities in hands-on STEM activities. We have since engaged more than 40,000 K-12 kids and built a cradle to career STEM pipeline model for communities.

Yes, I lost my tenured position, but I found my purpose and mission in life. I had been afraid to pursue other dreams I had because I was so comfortable in my position. The loss of my JOB, but never my HOPE, led me to find MY PURPOSE and PASSION!

**2. HOPE helped me find Community. Use this time to discover new friends and**

## **colleagues in different arenas**

In the aftermath of Hurricane Katrina, my family lost 29 homes. I instantly lost 62 colleagues and a community of scholars at Tulane. The neighborhood where I grew up was destroyed and my church imploded. Everything that gave me social connection and communal identity were either gone or displaced.

Hope helped me connect with a new community that helped me re-create myself.

Understand your value proposition to the market and the world. You were previously successful with your school and organization. How can you now package your skills for yourself for the new world or new normal?

COVID-19 is destroying our social connections and altering our relationships even with those closest to us. Take some time and do a self-inventory and be honest.

Being really busy focusing on everything but ourselves, sometimes we forget what it is that we have to bring to the table, although we were delivering it all of the time. Start to look for communities to re-engage and discover what uniqueness you have to offer the new world.

### **3. HOPE helped me find ME. Use this time to look within and find your voice!**

I was a research scientist with a lab full of undergraduate and graduate research students. I spent years studying fluid mechanics and heat transfer as they relate to the manufacturing of advanced materials. I know, yes, I was an egg head.

Late nights reading journals, writing proposals and grants to government agencies and foundations allowed me very little interaction with the larger community. Deep within me, however, was a desire to impact the community in which I lived, worked and played. I would drive to work and see kids walking to school down the same potholed-filled streets where I walked. I wondered how my work was impacting their lives.

After losing my job, I found ME and my voice! I now advocate and work on behalf of the children who otherwise may not ever be exposed to STEM education.

My work in the university and training as a scientist, coupled with finding a new community, gave birth to my true voice.

My true voice, the one that emanates from my core, is the voice that speaks and advocates for our children. The voice that gives them and hopefully you HOPE. The HOPE to keep pushing forward in the face of crisis and uncertainty. All of us have that voice within us, listen!

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If you are alive, with breath still in your body, you will continue to accumulate more losses and trials in your life. Losing, falling and failing are unavoidable, challenging, and painful parts of life, but you must never lose hope!

Our children are watching us. They can sense our anxiety and hear our nervousness. It is paramount that we hold onto hope, knowing that collectively as a community and even a nation, there isn't a challenge that we cannot conquer.

Out of the mist and fog of this Coronavirus crisis, we will discover a brighter day!

## **San Antonio Convening of STEM Learning Ecosystems taps ideas from those closest to learning**

More than 30 students attended and spoke at the semi-annual convening of the STEM Learning Ecosystems Community of Practice, offering advice and thoughts for STEM leaders throughout the world.

### **Alicia DeHoyos, a seventh grader from San Antonio:**

- “We now have flying cars and cell phones, but our education system has stayed the same for over 100 years.”
- “Our education system needs to change. We need to do more than just memorize facts and prepare for tests and many schools do not have the resources or the curriculum to support the needs of students today.”

### **Emmet Decker, a ninth grader from Northeast San Antonio:**

- “Students are mostly expected to give administration an easier time.”
- He emphasized the need for higher expectations and shares that when he is the CEO of a billion-dollar industry, he will give back to students, so they have the resources and support to create.
- He said it is critical for educators and others to “inspire wonder” and advocate for a school-wide Project Based Learning approach in order to increase access to innovation, invention and entrepreneurship.

### **Shreya Chaudhary, a tenth grader from San Antonio:**

- “In order to best support student’s momentum in innovation and STEM leadership, one of the most important demonstration of student support is for adults and educators to listen to children.”

### **Leslie Goodman, an 11th grader from San Antonio:**

- “If you know anything about coders, you know we never ever give up.”
- Teachers need to realize that students need to be able to pursue various channels for learning and be able to display their learning in different forms.

### **Rey Vela and Nathanael De León, seventh graders from Donna, TX:**

- Rey and Nathanael with support from their teacher, Daniel Gonzalez, designed and produced a robotic hand for Nathanael, who was born without his hand.
- The students said that collaboration and empathy, when combined with support from teachers, can lead to life-changing advancements.

### **Conrad Fellows, Olivia Bangs, Roberto Martelli, Divyesh Khatri, 12<sup>th</sup> graders from**

## **Houston TX:**

- The inventors of VoxLion, a platform that uses AI to help students improve their presentation skills, advise educators to teach more than what is in curriculum. “Soft skills including teamwork, and collaboration, are things we will use every day in business, but they are not being taught in school.” They stress the importance of “supporting students by providing coaching while allowing them to maintain their independence, including their independent ideas.”
- “Local companies can play an important role by providing internship opportunities while major, national organizations can provide access and exposure to their businesses and facilities, to really learn the inner workings.

## **Global convening leads with curiosity and collaboration based models of education and community engagement**

**SAN ANTONIO** – San Antonio Mayor Ron Nirenberg Tuesday told more than 500 members of the STEM Learning Ecosystems Community of Practice that “Here in San Antonio, Science dictates policy.”

His comments came a day after he declared that the city was in a state of emergency due to what he called missteps by the Centers for Disease Control for releasing a patient into the general public who had tested positive for the COVID-19 illness.

“When it comes to matters of public health, we will always be guided by medicine and science,” he said.

Nirenberg’s comments were one of more than a dozen mainstage presentations Tuesday, the second day of the bi-annual convening, “The Future is Here: Embracing it Together.”

Dominant themes of Tuesday included reminders about educating children to tackle the grand challenges facing the world, including epidemics.

### **The Power of Collaboration**

Speakers stressed the importance of collaboration to meet learning needs for future economic growth and of not underestimating students’ abilities. Leaders also recognized that families sometimes don’t have any idea how to support their children’s educations.

San Antonio Superintendent Pedro Martinez explained that more than 90 percent of the students who attend his school live in poverty and come from families that have no idea how to support their children’s educations.

“It’s not that my parents don’t care about their child’s learning. They just don’t know what they don’t know,” he said.

This, he said, is where ecosystems must step in and work to support families with meaningful and practical strategies to better support their students. He emphasized the power of cross-sector collaboration, a pillar of the global STEM Learning Ecosystems initiative. Such collaboration includes cross-sector partners from a wide variety of industries and sectors all working for shared common goals around improving students’ experiences.

“We have an open door to industry partners and higher education partners. To put all of this on our teachers is not fair. It has to be a community partnership,” he explained, noting that his school district was once failing and is now considered a leading system in Texas.

Martinez participated in a mainstage discussion with Donna DeSiato, superintendent of the Syracuse Minoa School District. Moderated by John Fitzpatrick, president of Educate Texas, the two superintendents touched on issues of equity and access in STEM education.

DeSiato said the ecosystem operating in her community has helped lead a wholesale transformation of the entire district into one that is focused on STEM and principles guiding it.

“We have had an entire paradigm shift,” she said, explaining that all schools in her district have become STEM schools.

Citing how there are no bells to signal students to move from class to class in middle school, she explained that students need to understand how to manage their own time and be in charge of their own learning.

The model of education that DeSiato is offering in East Syracuse Minoa is far more in line with what morning keynote speaker and inventor Radia Perlman explained is needed in order to foster invention and imagination.

“My superpower is having no memory at all,” Radia Perlman told the group. “I had to deeply understand everything instead of memorizing.”

Perlman, who invented key protocols that shaped and advanced the Internet, was inducted into the National Inventors Hall of Fame which sponsored her remarks to the group.

Perlman explained that stereotypes can negatively affect the numbers of women and people of color who enter STEM disciplines.

“Everyone has this notion that an engineer is someone who took stuff apart when they were little,” she said. “I never took stuff apart. I went to college not knowing how to change a light bulb.”

Perlman said teachers must be recognized and appreciated but also retrained with better strategies for supporting creativity.

The San Antonio Convening also featured news from global convening co-host, Movimiento STEM. In Mexico, Movimiento STEM will be recognizing the country’s leading teacher with a prize of \$1 million pesos. The prize, sponsored by the Varkey Foundation, will be awarded later in 2020. Find out more about the National Teacher Prize Mexico [click here](#).

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