

ILLINOIS SCIENCE & TECHNOLOGY COALITION

EDUCATION

10 Year Impact Report

A LETTER FROM ISTC'S DIRECTOR OF EDUCATION, BECKY GOLDBERG

Every year ISTC Education challenges students, educators, and mentors to innovate, ideate, and create something new. The push to evolve ideas, take feedback, and make an impact reflects our own organization's commitment to building a stronger, more inclusive STEM talent pipeline through quality programming and educational access. From ISTC Education's inception, the work has always revolved around high touch, high dosage, and high support experiences. It is with this exceptional attention to relationships that ISTC Education has been able to innovate, ideate, and create something new each and every year. We strive to take our own advice and model what it looks like to be on a continuous path of growth and walk in stride with our community.

After 10 years of impact, ISTC Education continues to take shape in response to participant needs. We have taken a critical look at programmatic elements and strategically built new structures for amplifying student voice and promoting trauma informed practices. Our programs have taken on new life as a key instrument for promoting access points for students to experience the real world. The Mentor Matching Engine became a critical tool during the pandemic and helped connect students during a disconnected time. The summer months were filled with student pitches and teacher exploration with the creation of The 6x3 Project and Teacher Externships; and our flagship program, The STEM Challenge, has seen a newly defined focus on human centered design, equity, and accessibility as it relates to real world problem solving.

Our future innovators are eager and excited to take on the challenges of tomorrow with the experiences and opportunities presented today. ISTC Education continues to embed ourselves in meaningful partnerships throughout the state and we look forward to the educational impact yet to come.

Best,

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Becky Goldberg, Director of Education Illinois Science and Technology Coalition

ISTC EDUCATION THROUGH THE YEARS



* Prep refers to the Chicago State University Prep Science Ambassadors program, marking the inclusion of out-of-school-time spaces utilizing MME.

TABLE OF CONTENTS

| 01 | ISTC: Education Origin Story | . 1 |
|----|--|-----|
| 02 | Program Summaries | . 3 |
| 03 | Evolution of Identity, Impact, and Goals | .7 |
| 04 | School Partner Geography | 12 |
| 05 | Student Snapshot | 14 |
| 06 | Legacy Partners | 16 |
| 07 | Programmatic Challenges and Outcomes | 18 |
| 08 | Looking Forward | 26 |

DATA COLLECTION AND METHODS

ISTC Education partners with a third party evaluator, The Silver Line Consulting, to measure the impact of each program. Tools include anonymous surveys for all program participants, Teacher and Partner debriefs, and student observations in the classroom and on MME. The questions outlined in the surveys are evaluated each year to reflect the current trends and company interests in pipeline development. ISTC reflects on our theory of change within the STEM Education landscape to address evidence-based approaches that keep our work and outcomes relevant to student success in STEM.

01 ISTC: EDUCATION ORIGIN STORY

The Illinois Science & Technology Coalition (ISTC) is a member-driven non-profit, nonpartisan organization that was created to understand, ignite and cultivate technology-based economic development throughout Illinois. Our mission is to measure, connect, and enrich the Illinois innovation economy.

Authorized by state statute in 1989 as Illinois' technology adviser, ISTC serves as a convener, catalyst, and champion for Illinois' research, science, and technology ecosystems. By providing our members and partners with a shared voice, ISTC delivers measurable economic impact and positions Illinois as a national innovation leader and attractive economic location for business investment and location.

ISTC members represent leaders in the state's innovation ecosystem and include major Illinois research universities, federal labs, Fortune 500 corporations, and civic organizations.

In 2012, ISTC created the Illinois Science & Technology Institute (ISTI), our 501c3-affiliate, in response to an increased need to bridge what was happening in the classroom and the innovation in the real world. The ISTI was developed after the corporate and university members of the Coalition recognized the need to build a more inclusive, diverse STEM pipeline in the state. In a Deloitte and Global Business Coalition for Education study, 31% of youth surveyed cited lack of relationships as a key barrier in attaining workforce skills. Another 51% cited lack of opportunities, and 79% indicated that they had to look beyond school to get skills for the job they want.

ISTI was chosen to lead the R&D STEM Learning Exchange as part of Illinois Pathways Race to the Top program. This initiative was a public-private partnership intended to better connect stu-



East St. Louis Senior High School visiting Vistra

dents to careers in STEM fields. Boasting more than 40 industry and nonprofit partners, the R&D STEM Learning Exchange launched its 2013–14 pilot year with 13 high schools. The Exchange aimed to increase and enhance the number of authentic, inquiry-based learning experiences for Illinois students and enable greater completion of postsecondary education in R&D fields.

In order to facilitate these meaningful connections, ISTI built the Mentor Matching Engine, an online platform that allows even the busiest professionals to connect with students anytime, anywhere, in a safe and secure environment. ISTI collaborated with IMSA and Northwestern University to create the first version of MME. The second version launched in 2015 and has remained under a master service agreement with DevMynd, now known as Tandem.

The platform has fostered mentor relationships through consistent and ongoing communication, thus removing barriers to traditional mentorship. ISTI has pioneered virtual mentorship in the classroom. Our belief in high dosage communication helps create meaningful connections for students and mentors. Even through the pivot to emergency remote learning in 2020, the Mentor Matching Engine had sustained reputable momentum to continue supporting students, teachers, and mentors during a disconnected time.

In 2021, ISTC reintegrated and rebranded the institute as ISTC Education in an effort to streamline resources and encourage cross-collaboration throughout all of its staff and programs.

ISTC Education continues to focus on Science, Technology, Education and Mathematics (STEM) education, connecting companies and entrepreneurial professionals with high school students in meaningful ways to better prepare the next generation of problem solvers.

Our goal is to create pathways of access to STEM opportunities and resources for all students across Illinois. Our programs help change what STEM education and experiences can look like by partnering mentors with students in the classroom and focusing on real world problems.



▲ Muchin College Prep students with their Baxter Mentor at Baxter

"I saw several groups of students collaborate with others that I have never seen talk to each other outside of the classroom. The mentors coming in giving them major feedback was outstanding because they also learned to interact with industry professionals and collaborate with industry professionals. This project has helped them with so many soft skills that they can carry over into their futures."

> -STEM Challenge Teacher (2022)

02

PROGRAM SUMMARIES



Through the STEM Challenge program, ISTC Education partners Illinois high schools with some of the state's most innovative companies over 4-6 months to explore, create, and build innovative solutions to authentic industry problems.

ISTC Education works with companies to develop customized, interdisciplinary challenges that reflect current priorities or pressing industry needs. Students apply classroom learning to investigate, develop, and refine solutions (new products, prototypes, apps designs, etc) that they ultimately present back to the company.

Company employees support student learning as mentors—providing expertise and feedback both in-person and virtually through our Mentor Matching Engine.

"It's really an interesting transition when you ask 17 year olds to start thinking like degreed engineers, ISTC gives that opportunity to my student for them to see the bigger picture, the bigger world"

> -STEM Challenge Teacher (2021)



The 6x3 Project adapts the successful components of ISTC's STEM Challenge, and reimagines a more holistic approach to problem solving. ISTC collaborates with other innovative non-profits and a designated corporate partner to deliver an immersive 6-week summer experience that helps young innovators build skills in human-centered design, coding, entrepreneurship and business.

Company employees and community experts support student learning as mentors—providing expertise and feedback both in-person and virtually through the Mentor Matching Engine.

ISTC is proud to host multiple iterations of the 6x3 Project; The Bright Project and The ACT Project.

"I loved the combination of skills we learned, it wasn't always about the pitch, website, or just the group. We learned, took the information in, and used it for ourselves which helped me so much. You experienced what you learned on your own and with others which is why I think made it such a great experience for me. I think I gained a lot of confidence in working in a professional setting which makes me more confident for working in the real world"

> -6x3 Project Student (2022)

Mentor Matching ENGINE

The Mentor Matching Engine (MME) is both a virtual platform and educational program for independent, innovative student research. MME is a project-based, virtual collaboration platform that allows busy industry professionals to connect with students anytime, anywhere in a safe and secure environment. MME, as a platform, focuses on skills-based volunteering and matches mentors with students utilizing their professional expertise. MME, as a program, allows high school students to create projects online and select from our pool of recruitedand vetted mentors (all background checked), and then allows the students to work with these mentors virtually over the course of the year, with the teacher able to oversee and monitor all communication.

Company employees, university students and faculty, and other volunteers support student learning as mentors—providing expertise and feedback virtually through Mentor Matching Engine. Mentorship through MME allows skills based volunteering with convenience and accessibility at the forefront. Mentors can leverage their own experiences and backgrounds to build the next generation of leaders.

"Thank you to MME for not just providing me a research advisor and mentor but also a role model—someone who has allowed me not just to be a better researcher but a better human being over these past 8 months"

> -MME Student (2020)



The Teacher Externship program provides educators with relevant, real-world professional learning through an innovative partnership with a local company.

Teacher Externships are a critical link between the context of industry and the content of a classroom. This experience creates lasting partnerships between workplaces and local schools which as a result, give students real-world career information about career possibilities locally.

Teachers get the opportunity to interview, shadow, observe, and work alongside company employees to see the latest real-world applications of STEM disciplines. This helps to better inform their teaching practices and prepare students to enter the STEM talent pipeline after high school.

"I think that having the externship experience gave me a clear look into the corporate world and it made me aware of the skills that are necessary to find success in the work world. With this knowledge I can easily relay and emphasize this information to my students by refining lessons that I have to foster these "corporate skills". Also, as a teacher, I'm a life coach so it is very easy for me at the beginning of a class to take some time to talk about life and how to approach your future. I plan on sharing a lot of the information that I gained from my externship experience with my students."

> -Teacher Externship Teacher (2022)

03 EVOLUTION OF IDENTITY, IMPACT, AND GOALS

Traditional education, as a system, confines student growth to the content of the classroom. ISTC Education works to break down barriers and connect students with the context of the real world. When ISTC Education, then ISTI, first started, our charge grew from the need to connect innovative professionals with students in the classroom. Over time our mission evolved to not only impact the next generation of innovators and bridge the gap between classroom learning and real world experience, but to be an access point to STEM experiences for historically excluded populations of students/ teachers. In doing this, we are better able to build student capacity to see themselves in the solutions of our future. This growth took time, reflection, realignment, and community engagement.

> "I think it's really important for kids to have a balance between academic learning where they're learning skills and tools and opportunities to take those skills and tools and apply them to real world problems"

> > -STEM Challenge Teacher (2018)

MENTOR MATCHING ENGINE

Since 2012, Mentor Matching Engine has gone through major changes. Everything from its initial functionality, categories, and usage has changed based on the needs and requests of our users. ISTC Education staff recognized that unless intuitive and accessible, MME could not be a staple resource in the classroom. Through annual debriefs and touch points the team receives consistent feedback on the functionality of MME as a platform.

The Mentor Matching Engine (MME) has expanded to include new courses and new categories. In 2019, ISTC welcomed two classes of Global Scholars. The Global Scholar Certificate was designed in response to the knowledge that future careers will depend heavily upon the ability of students to work and collaborate in multiple cultural contexts. The Illinois Global Scholar Certificate awards merit, on the state transcript, to students who have attained global skills and knowledge through academic coursework, globally-focused service learning, global collaboration, and the successful completion of a capstone project. Two participating schools utilize the Mentor Matching Engine in their capstone projects.

The MME has also expanded to include categories such as pop culture, LGBTQIA+ studies, media, art/design, social justice, literature, and marketing. Students are eager to explore the complex intersections of social sciences and have continued to build upon their understanding of STEM in real world application.

TEACHER PROFESSIONAL DEVELOPMENT

While the Mentor Matching Engine is an integral element of our programming, the platform takes on life by the participants who use it. ISTC Education has led over 20 Teacher Professional Development (PD) sessions over the last 10 years to ensure our teachers are not only trained on the platform, but trained to leverage it as a tool for an extraordinary experience. In 2013 PD ran as a joint event to help teachers understand the utility of MME, however with such defined features for each program the professional development workshops quickly pivoted to offer two sessions, one dedicated to MME and the other to STEM Challenge. Teacher PD split even further in 2019 when the Education team added a third development session for teachers using MME specifically for AP Research. Through this model ISTC has successfully integrated teacher-led sessions to better illustrate success through classroom application. The STEM Challenge PD has also developed from a focus on design thinking, to a more human centered and equity centered approach.

"What I enjoyed most was the sheer amount of support this website had for the students. It was a great way to get tips and pointers from professionals, and each mentor I had was amazingly helpful and respectful."

> -MME Student (2020)

"I really liked this project because it was very collaborative. This was my first big project that took almost a year to complete. I really enjoyed being able to choose my topic to learn about and loved the way that we had to research about the topic."

> -MME Student (2020)

MENTOR TRAINING

ISTC Education programs aim to better prepare students for the real world, and to prepare the world for our students. Since 2013 Mentor Training has been available for all mentors prior to connecting with students. ISTC Education prepares mentors to navigate the platform, communicate regularly, and offer feedback, support, and guidance when necessary. In 2020, the murder of George Floyd, Breonna Taylor, and others, sparked a deep internal reflection. Are we offering mentors successful strategies to support students in a trauma informed and anti racist capacity? The team consulted with next generation DEIA consultants, The Darkest Horse, to develop a DEIA and Trauma informed mentorship training to deliver in addition to best practices. In 2021, the team went through a train the trainer series to add the concept of participatory design. For the Fall of 2022, the team will be embedding another layer of training focused on building trust across differences and applications of trauma informed mentorship. These training sessions have shifted focus with students and mentors. They have helped illustrate explicit expectations around respect and support so that our students can show up as their full selves in a way that is safe and productive. They have helped our mentors check internal bias and approach students from a place of empathy to better foster belonging and inclusion in research and STEM.

STEM CHALLENGE

While evaluating our internal practices to promote DEIA, the ISTC Education team also began re-evaluating the content of the STEM Challenge. While past challenges have been rooted in technical concepts or big picture problems, the last few years have prompted a new era of challenge statements. Companies, along with ISTC, have worked to include intentional integration of accessibility, inclusion, and equity challenges. Both AbbVie and Horizon updated their challenges to focus on representation in the workforce and in patient populations, while John Deere and Caterpillar reimagined remote control technology to make machine operation more accessible to individuals with disabilities. Microsoft and Vistra have shifted their focus on sustainability and using technology for good. Each of these changes have resonated with students and illustrated the importance of social consciousness in the real world. "This is real life that they're experiencing here, but they're doing it in a safe space where they have mentors, teachers and it's okay to fail"

> -STEM Challenge Coach (2021)

"I've been able to get so many new perspectives from different students, teammates, and mentors. Getting to learn about all these different things that people are doing to help better our future, I think that is exhilarating"

> -STEM Challenge Corporate Partner (2019)

THE 6X3 PROJECT AND TEACHER EXTERNSHIPS

In a continued effort to reflect and adapt within the organization, ISTC Education launched two new programs in the summer of 2021; The 6x3 Project and Teacher Externships. The 6x3 Project allows students the opportunity to connect with professionals while building tangible and marketable skills. This initial collaboration of nonprofits, including The Gray Matter Experience and Code Nation, and support from Horizon Therapeutics and The Christopher Family Foundation, brought together opportunities for students across the city of Chicago to dive deeper into the interdisciplinary nature of STEM innovation. 20 students pioneered the first iteration, all representing different neighborhoods, schools, and communities in Chicago.

One student stood out to the team as a consistent source of positive energy, curiosity, and enthusiasm. Duajuan Bright joined the 6x3 Project to better combine his love of coding with real world application and further refine his workforce skills. Mr. Bright was a gracious teammate, compassionate leader, and persistent innovator.

Shortly after the program concluded Mr. Bright passed away unexpectedly. His absence was felt by his family and friends, and the communities in which he was a part of.

To honor his memory and his impact in the STEM ecosystem here in Chicago, the first 6x3 Project iteration, is known as The Bright Project. The Bright legacy will serve as a reminder for future participants that every student can have an impact and pursue a future that brings them joy, just like Mr. Bright. The Bright Project served 18 students in the summer of 2022.

In 2022 we welcomed the ACT Project to the 6x3 Project series along with 12 new students and new partnerships with Code Your Dreams and Baxter International.. Co-Created by Joe Almeida, Chairman, President and CEO of Baxter International Inc., the ACT (Activating Change Today) Initiative was launched as a multidimensional and multiyear initiative to advance inclusion and racial justice within the workplace and within the communities Baxter serves. ISTC's ACT Project, honors the work of Baxter leaders and employees through grassroots programming aimed at developing the next generation of innovators with an explicit lens on equity and justice.

While the 6x3 Project Series supported students through the summer months, Teacher Externships offered a refreshing opportunity for teacher engagement. In 2021, CDK Global and District 211 helped pilot our first ever externship experience. 2 teachers and 8 employees connected virtually over the course of 20 hours to explore the connections of the corporate world and the classroom. In 2022, 4 teachers and 8 employees continued to build relationships and better understand 21st century workforce skills in action.



▲ At the ISTI STEM Challenge Showcase in Chicago

"Students go through this process end to end. From ideation to refining that idea, to working on design all the way to building it and then actually presenting that to various audiences including their mentors"

> -STEM Challenge Teacher (2015)

STUDENT ADVISORY BOARD

In order to truly center students, ISTC Education continued to question how we as an organization were amplifying student voices. The 2021-22 Student Advisory Board was then created to nurture student leaders for the benefit of the full ISTC community. We are excited to welcome 19 new students to the Student Advisory board for the 2022-23 programmatic year.

The consistent adaptation of programs, platforms, and key programmatic choices are crucial to remain relevant and responsive to the needs of our students, teachers, and mentors. It is no longer just the goal to bridge the gap between the classroom and the real world, but rather to expose students to experiences that help them build an identity within STEM and research so that they pursue those fields courageously and confidently.



▲ At the ISTI STEM Challenge Showcase in Chicago

SCHOOL PARTNER GEOGRAPHY

The ISTC Education, also referred to as ISTI, had its inaugural year in 2013 and started with 13 schools across the counties of Cook, DuPage, Kane, and Lake Counties (Figure G). From 2013 to 2017, an increase of 55 schools utilized the Mentor Matching Engine in their curriculum at least once. The first five years increased to the following counties: Tazewell, Knox, Champaign, Livingston, Will, McClean and Macon county. A focus on recruiting schools with demographics that reflect those most historically excluded as part of our commitment to equity was instrumental in the outreach process through 2022. From this commitment, an increase of 41 schools utilizing ISTC Education programs at least once occurred from 2018-2022 with the addition of Peoria, Madison, St. Clair, Kendall, Rock Island, Kankakee, and McHenry counties. In sum, the Mentor Matching Engine, used in the STEM Challenge and The Mentor Matching Engine program, has reached a total of 101 unique schools in 18 counties (Figure I).

"I think it's a great opportunity to connect young people with the corporate world, our kids are the future and these corporate partners are helping to promote future learners of this nation"

> -STEM Challenge Teacher (2015)



▲ ISTI's Inaugural Year (Figure G)

One of the most notable outreach successes of the last 10 years was the partnership with PREP Science Ambassadors, an after-school program located at the University of Chicago that has students across different high schools participate in STEM research. The majority of the legacy partners are situated in Cook county and have been with us for 7 to 9 years; they are Gwendolyn Brooks College Preparatory Academy, Lindblom Math & Science Academy, Palatine High School, Wheeling High School, and Von Steuben Metropolitan Science Center. This is our most notable outreach success within our first ten years for two reasons: 1) PREP Science Ambassadors provides a new insight for a new partnership model that uses the Mentor Matching Engine outside of school hours in a community space, and 2) having strong roots in the Chicagoland area sets up a new opportunity to grow new roots throughout the state. Looking forward, the Illinois Science and Technology Coalition is eager to maintain its mission for educational equity across the state. This mission will emphasize outreach to areas such as Coles, Union, Jackson, Adams, Iroquois, Wabash counties and more. The 2022-2023 academic year is beginning with seven new schools from the previous year.



▲ ISTI's midpoint outreach implementation in the 2017-2018 academic school year (Figure H)



▲ ISTI's Total outreach implementation from 2013-2022 (Figure I)

05

STUDENT SNAPSHOT

MENTOR MATCHING ENGINE AND STEM CHALLENGE DEMOGRAPHICS

The start of the ISTC Education journey began with 400 students in 2013. Since then, 14,000 students have participated in the Mentor Matching Engine and STEM Challenge programs. Data collection on the impact of the education programs began in the 2016-2017 academic year. The majority of students participating are first time participants as evidenced by the steady number of reported first time participants-90% in 2017 and 94% in 2022 (Figure A). This aligns with our efforts to reach new students each and every year. ISTC's mission of creating access to mentorship is noted by 73% of students working with a mentor for the first time in 2017 to 88% in 2022 (Figure B). This is a critical reminder that our programs serve as a first access point for many of our students as they learn to communicate and collaborate professionally for the first time. ISTC Education puts an emphasis on building student confidence, as we know it is a leading indicator of students' likelihood to pursue STEM in the future. Confidence within our student demographics rose from 85% in 2017 to 94% in 2022 (Figure C). As we work to specifically partner with students historically excluded from STEM fields, it is important to note we have room to continue growing. Our most diverse student population occurred in 2022 with over half of participants identifying as a race outside of white (Figure D). The majority of students within ISTC's flagship programming are 11th and 12th graders.

"I think more of these programs need to be established. A lot of students don't know what the actual STEM field entails"

> -STEM Challenge Teacher (2020)



▲ Students' First Time Participating with ISTC 2017 vs. 2022 (Figure A)





▲ Students' First Time Working with a Mentor 2017 vs. 2022 (Figure B)

in STEM Skills 94% 85%

2022

Students' Increase of Confidence

▲ Students' Increase of Confidence in STEM Skills 2017 vs. 2022 (Figure C)

6X3 PROJECT STUDENT DEMOGRAPHICS

The inaugural year of the 6x3 Project welcomed 20 students from across 12 Chicago neighborhoods including the following schools: Chicago Math and Science Academy, Intrinsic High School, Lindblom High School, Muchin College Prep, Noble Street College Prep, North Chicago Community High School, North Grand High School, Phoenix Military Academy, Rauner College Prep, UIC College Prep, and Walter Payton College Preparatory High School. Participation was fully virtual in 2021, and pivoted to accomodate a hybrid facilitation in 2022. 2022 saw an increase to 30 students from 19 new high schools in the neighborhoods of Near West Side, East Garfield Park, East Village, Rogers Park, Richton Park, North Park, North Lawndale, West Englewood, Lincoln Park, Hyde Park, Gage Park, McKinley Park, Mount Greenwood, Pullman, Back of the Yards, Evanston, and South Shore.

In 2022, 93% of students reported this was their first time working with a mentor in a professional setting, indicating that we are continuing to deliver on our mission to providing access to academic and career pathways in STEM. 100% of students indicated an increase in confidence in their STEM skills as a result of participating in our program and 93% believe they can succeed in a STEM. 70% are interested in new STEM careers and educational opportunities. Confidence, a sense of belonging, and interest in STEM are excellent indicators that students will continue to engage with STEM.. Grade demographics (*Figure E*) recorded 34% of students being in 9th or 10th grade as well as having a highly diverse student population (*Figure F*).



▲ Student demographics in the 2021-22 academic year, including the STEM Challenge and The Mentor Matching Engine Program (Figure D)



▲ Student Grade Participation in the 2022 year of the 6x3 Project (Figure E)

▲ Student Participation in the 6x3 Project by race (Figure F)

06

LEGACY PARTNERS

The base of ISTC Education's work is rooted in acknowledging that success does not happen in a silo. Companies have a paramount role to play in caring for vulnerable populations and building capacity within their community. Corporate Social Responsibility is more than just "doing good". It is the understanding that businesses and corporations are a part of the larger community.

ISTC's goal is to identify and partner with companies eager to impact the next generation of innovators. We require personnel in a grassroots, boots-on-the-ground model that demands more than just a financial contribution. We value our partners who all go the extra mile to make an impact in their local school, city, state, and beyond.

Over the past decade we have been in community with some of the most innovative industries in Illinois. In the 2013-14 school year, ISTC Education operated programs as the R&D STEM Learning Exchange. We were pleased to welcome Motorola Solutions, Baxter International, The Greatest Good, Northrop Grumman, and the Illinois Institute of Technology's Institute for Food Safety and Health on the original STEM Challenge in partnership with 13 IL schools. In the 2014-2015 school year, students from 20 high schools worked on ten challenges with an expanded group of industry partners, including Baxter International, ComEd, Illinois State University's Center for Renewable Energy, Microsoft, Motorola Mobility, Motorola Solutions, Northrop Grumman, TGG Group, and Takeda Pharmaceuticals. In the fall of 2015, a growing cohort represented The AbbVie Foundation, Argonne National Laboratories, Baxter International, Illinois State University's Center for Renewable Energy, Microsoft, Motorola Mobility, Motorola Solutions, Northrop Grumman, TGG Group, and Takeda Pharmaceuticals.

The STEM Challenge community grew again in the 2016-2017 school year, hosting challenges with The AbbVie Foundation, ADM, Baxter International Inc., Horizon Pharma, Illinois State University's Center for Renewable Energy, Loyola University Chicago, Microsoft, Motorola Mobility Foundation, Motorola Solutions Foundation, Northrop Grumman, State Farm, and Takeda Pharmaceuticals. In 2017-2018, ISTC added a new batch "The ISTC STEM Challenge is the most authentic type of learning that we do at our school. I think students are engaged in the learning process at a higher level than they would in other activity"

> -STEM Challenge Teacher (2018)

"In the classroom, you can always do project or problem based learning. But at the end of the day the students are just seeing some problems that you as a teacher came up with. Getting a chance to come here and do the STEM challenge where the students get to see that this is a problem; that professionals, adults, are now asking me to pursue a solution to"

> -STEM Challenge Teacher (2018)

of companies including Dynegy, Molex, and Caterpillar, followed by Astellas, Dell, Allstate, Cisco, CME Group, and IBM for the 2018-19 school year. ADM remained as a partner, but pioneered a new model of mentorship, pairing company mentors with independent student research at a specific school. The partnership blossomed between ADM and The Chicago High School for Agricultural Sciences and served as an excellent model for pipeline development.

As we celebrate our 10th year of programming, we are honored to work with a robust community of partners- The AbbVie Foundation, Baxter International Inc., Caterpillar Digital and Caterpillar Peoria, CDK Global, CME Group, Horizon Therapeutics, Microsoft, Milwaukee Tool, Motorola Mobility Foundation, Northrop Grumman, Paylocity, Shure and Vistra. "I love all of the program components! It was such a cool experience applying our class knowledge to real world problems and being able to expand our skills to tangible solutions. I really enjoyed working with the mentor who was unbelievably helpful and supportive. It was also very fun getting to participate in completions and presentations that we would not have gotten in our other classes"

> -Student (2017)



▲ ISTI STEM Chicago

07 PROGRAMMATIC CHALLENGES AND OUTCOMES

CHALLENGES

MME PLATFORM AND PROGRAM

With 10 years of implementation, the Mentor Matching Engine as a program and as a platform has gone through a series of challenges. From the students' perspective, the learning curve of working in group projects, the long timeline of participation, and the amount of time needed to use MME were major adjustments for participants. The Mentor Matching Engine program exposes students, many for the first time, to the research process. In this experience, some students struggled with the data collection process and needed to find multiple routes in order to complete their project. While mentors benefit students substantially in the research process, the human factor also means that some are less consistent, reliant, or responsive. This is a continued challenge for ISTC staff to address. Teachers have also shared challenges over the years such as the need for a bigger variety of mentors, consistent functionality, and cost to host the program. The ISTC Education team works to debrief on each of these challenges as soon as they are brought to our attention. We continue mentor recruitment throughout the year to ensure diversity in background and expertise and work with teachers ahead of time to scope out their potential class project topics. ISTC is also in constant communication with our developers to troubleshoot any technical challenges in real time. Lastly, ISTC sets aside scholarship funds to ensure that cost is not a barrier to participation. Mentors have shared in some of the same challenges when it comes to responsive students and consistent communication, which had led ISTC to hone in on communication strategies during PD. Mentors also continue to navigate the best ways to interact with the teachers so that their expectations are clear and aligned.

"Once both groups realized failure was necessary to succeed, they were more willing to risk and to free themselves of previous expectations that they "get it right". Experimental design is messy and open-ended and the growth came through the empowerment they felt as they realized they were in control and I didn't have an answer key."

> -MME Teacher (2020)

STEM CHALLENGES

ISTC Education is often approached or connected with companies eager to work with students underrepresented in the current STEM landscape. One of the greatest challenges to the STEM Challenge program has been defining expectations and aligning with our corporate partners on what success looks like. For many of our school communities, The STEM Challenge is not the only challenge they are tackling. Some deal with student homelessness, food insecurity, unreliable technology access, and more. It is our goal to provide company mentors with tools and strategies to support student learners at every level. Each year we work hard to help our companies redefine success through a student centered lens. ISTC works hard to deliver thoughtful partnerships to benefit both the companies and the schools.

Additionally, the ISTC Education team has struggled to bring on new STEM Challenge partners in the past few years. The grassroots connection and mentorship, while transformative, seems to be too small for some companies. While some industries are well equipped to support greater numbers with a lighter touch, the industries most successful in ISTC partnerships invest in a smaller group with intention and depth. ISTC is working to navigate those conversations to maintain the STEM Challenge program and clarify the benefits of its pipeline development.

6X3 PROJECT

Because 6x3 is still early in its implementation there are a number of challenges present. The first being the navigation of partner organizations. The ISTC Education team has worked hard to synthesize our own best practices and integrate the expertise of other non profits. This has caused significant conversation around program identity, desired outcomes, and the best ways to support students. Challenges also relate to the actual implementation format. Since adopting a hybrid format in 2022, the majority of students indicated that they would like to see more in-person learning and engagement opportunities for improvement of the program. Students indicated that the environment of the 6x3 Project is highly collaborative and would like to move away from virtual components in the future. While this is the staff's preference as well, we are working to balance program accessibility and access to consistent space.

TEACHER EXTERNSHIPS

In 2021 the Teacher Externships program launched its pilot experience. Due to conditions and requirements still in place around COVID-19, the experience was fully virtual. Teachers and employees reported a preference to pivot to in person for the following year. In 2022, the program moved to accommodate in person engagements, however the flexibility of hybrid work has also influenced some employees to remain as fully virtual participants. We found higher engagement and satisfaction came from teachers and employees who were able to meet fully in person. Approaching hybrid opportunities is still a challenge. We are trying to balance accessibility for a diverse set of employee mentors without compromising the teacher experience.



▲ Students working with their mentor at their Kick Off event

"I was so impressed with the students, their creativity, engagement, and presentation. I enjoyed observing them develop their ideas into a project, reshape the project and then develop a web page. This program is developing future leaders."

> -6x3 Project Mentor (2022)

OUTCOMES *PROGRAM PARTICIPANTS*

STUDENTS

Focused efforts on improving the Mentor Matching Engine user experience to foster creativity, resilience, and a pathway into technology for students were implemented from 2017 to 2022. An increase in MME being easier to use from 82% to 92% was reported within the last five years (*Figure J*). This is a direct action to the assessment of Mentor Matching Engine platform challenges listed previously to improve user experience as well as provide a smoother time engaging in academics. Students reported a better experience with the platform as a way to connect with their mentor, with 91% responding it was easy to use in 2022 compared to 82% in 2017 (*Figure K*). Since the majority of our students report that their experience engaging with ISTC is their first time working with a professional mentor, it is important to remove as many barriers as possible with user experience to ensure confidence in students' being able to use their voice.

The Mentor Matching Engine seeks to bridge the gap from high school to 21st century workforce skills. Comparing student skills from 2017 to 2022, an increase in communication, research, and collaboration skills was reported by students on the Mentor Matching Engine (*Figure L*). The goal of creating access to mentorship is to develop touchpoints into careers and academic areas to those historically excluded. Our demographic evaluation reported an increase in interest in pursuing STEM research in the future as a result of working with ISTC (*Figure M*).

Students also reported via qualitative self-report assessment that overwhelmingly so, mentors encouraged students to both increase their passion for STEM in high school and to pursue it upon completion of high school. In 2017, 78% of students stated they would like to work with their mentor again with 81% stating their mentor was a driving force in their success. This driving force was also found outside of academics, with 61% of students detailing their mentors providing support in college and career advice within the Mentor Matching Engine. From this, we are succeeding in our mission for providing new pathways for students to grow after their ISTC and high school experience.

ISTC grew our evaluation measures from 2017 to include new data points to further evaluate program development and success. In 2022, new data points to measure students' reported STEM skills throughout the program were implemented. These new data points include increasing areas of development in the following areas: 83% in confidence, 80% in creativity, 81% in project management, and 79% in presentation skills, indicating that we are maintaining our mission for workforce skill development. Furthermore, a measure on assessing empathy was implemented to gauge social and emotional learning skills, such as seeing research from a different perspective, or gaining insight about the hypothesis being studied. 67% of students reported



▲ The Bright Project Showcase 2022

"I liked the individualized feedback and relationship I got to build with my mentor. It was very helpful to have someone who has gone through the processes I'm going through help me. It was great to have an extra set of eyes pick up on discipline-specific things I wouldn't have otherwise noticed"

> -MME Student (2022)

gaining skills in empathy as a result of participation. Participating and providing education and research on human centered design, empathy mapping, painstorming, and trauma informed practices proved to be productive. By implementing this structure into our programming, students are learning how to evaluate more inclusive practices before they enter the workforce.

MENTORS

Mentors play a crucial role as a teammate for our students. Mentors provide resources, guide ideas, brainstorm next steps, and help students refine their project. These relationships provide feedback, validation, and encouragement to build student confidence. Many mentors take on between 1-5 projects and serve both individuals and groups of students depending on the program. Mentors communicate with their students at least once a week. "In our math class, we're just doing lectures and afterwards we have homework. But having an assignment outside the classroom that really touches on creativity rather than pure math was just really awesome!"

> -MME Student (2022)

Students report of "The Mentor Matching Engine is easy to use" 92%

2017

Students' Improvement of Skills

throughout the Program

2022





▲ Student Report of the connections to their mentor on MME (Figure K)



▲ Student improvement of skills from 2017 to 2022 (Figure L)



Increased Remained the same Decreased

Students' Interest in pursuing STEM Research

Student Interest of STEM Research 2017 vs. 2022 (Figure M)





From 2017 to 2022, mentors on the Mentor Matching Engine saw an increase in student skills in communication, collaboration, implementing feedback, and perseverance (*Figure N*). In the culmination of the ten years at ISTC, mentors reported that their students showed an improvement in open-mindedness and initiative. Furthermore, mentors indicated that students were able to learn, implement, and fine tune their professional communication skills. Mentors concluded that students were able to learn the process of inquiry, critical thinking, and being able to ask the "right questions" pertaining to their research process as a result of the Mentor Matching Engine. The biggest benefit from their experience as a mentor was being able to spark curiosity, grit, and perseverance. Most notably, an average of 99% of mentors reported they value their company providing opportunities for skills-based volunteering in the Mentor Matching Engine.

TEACHERS

Consistently from 2017 to 2022, teachers reported that their students improved their skills in communication, collaboration, problem solving, research, and perseverance with above 90% assessment. By the end of 2022, 100% of teachers reported improvement in communication, collaboration, presentation skills, research, problem solving, implementing feedback and creativity skills in their students. Teachers stated that their students' mentors were instrumental in the process in gaining improvement in these skills as well as confidence, with 100% of teachers in 2022 outlining this mentor role success. Furthermore, teachers reported mentors being an integral part of fostering creativity, providing insight, and overcoming roadblocks throughout the process. Although there was variability in the kinds of projects students pursued, mentors across the board were able to provide expert advice and enhance relationship building for all of their students. 96% of teachers found that mentors were crucial in their students' success and found mentors to be helpful in student projects.

"It is wonderful to see young people grow in their ability to imagine futures that they couldn't see at the start"

> -Mentor (2022)



▲ Mentor Report of Student Skills 2017 vs. 2022 (Figure N)

"For some students, the idea of working with a mentor was intimidating because they were worried about sharing their perceived lack of knowledge about their topic. In watching these students, I saw their confidence and comfort with their mentor improve as the project progressed. I felt that this really provided an opportunity for growth for those students."

> -MME Teacher (2020)

A CLOSER LOOK AT THE 6X3 PROJECT

Improvement of student skills in communication and decision making skills saw the biggest increase between the two interactions of the 6x3 Project (*Figure O*). From 2021-2022, the average improvement of collaboration and presentation skills was 97%. The improvement of problem solving skills both reported a 100% increase in 2021 and 2022. New data points of measuring creativity, empathy, and perseverance skills were added in 2022, which saw an increase of 93%, 85%, and 93% respectively.

100% of students reported they have a more positive attitude towards entrepreneurship in 2021 and 2022 from collaborating with the Gray Matter Experience and an average of 93% indicated that they have learned more about entrepreneurship within this collaboration than other programs students have participated in. An increase in the evaluation of "entrepreneurship is a good fit for people like me" saw a 5% increase and the average students reporting they are likely to start a business was 65%.

The engagement with Code Nation saw a tremendous response in both interactions. 100% of students reported "Code Nation taught me new computer coding skills", "Code Nation has made me more confident in my coding skills", and "Code Nation has made me more prepared for a career using coding skills." Furthermore, an average of 88% reported they are more interested in pursuing a career using coding skills from the program. In 2022, Code Your Dreams was an added member to the collaboration from expanding the 6x3 Project. Within this assessment, 100% of students indicated that they felt they can make a difference from using technology with 83% confidence in building an app to solve problems. 92% of students were excited to learn more about computer programming and indicated computer science can be used to solve real world problems, with 75% of Code Your Dreams participants eager to pursue a career in computer science in the future.

In qualitative assessments, students overwhelmingly thanked ISTC for creating this program as it helped them with their confidence and bringing them an opportunity that was previously seen as unattainable. Repeatedly, students discussed that they would like to do the 6x3 Project again and reported intense feelings of accomplishment and gratitude from the engagement. Many students indicated they were proud of their growth and participation after the showcase.

The success of the 6x3 Project is amplified by the voices of our mentors. In six data assessment categories, including student engagement and relationship building, mentors in 2021 and 2022 reported 100% totals (*Figure P, Figure Q*). The mentor voices indicate the high intensity of growth, collaboration, and success from a high impact, high dosage experience within just six weeks. The successes of the two iterations of the 6x3 project is launching new initiatives in the middle school space for the summer of 2023.

Improvement of Students' Skills in the 6x3 Project



Communication and decision making skills 2021 vs. 2022 (Figure O)



▲ Mentor assessment of student engagement in the 6x3 Project (Figure P)



▲ Mentor responses about their experience in the 6x3 Project (Figure Q)

TEACHER EXTERNSHIPS

After completing the Teacher Externship experience, 100% of teachers and employee mentors said they would recommend the program to a colleague. 100% of employee mentors also reported that they observed teacher growth in interpersonal skills.

Teacher Outcomes

- Better understanding of "the real world"
- Connection to a local corporation
- Direct relationships with professionals in the field
- Better understanding of student skills needed to be successful
- New career awareness for student guidance

INSPIRING THE NEXT GENERATION



- 100% Mentors who would recommend the experience to a colleague.
- **100%** Mentors who reported teachers strengthen their interpersonal skills.

ADDITIONAL BARRIERS IN THE EDUCATION LANDSCAPE

ACCESS

ISTC's goal is to demystify the workforce; we work with partners and communities that are open and excited to explore new opportunities to advance education equity. The current school system is currently a barrier point in education for many students from differences in funding, available opportunities, and resources to engage within their education. For many, there is no line of sight into different career and education pathways before the participation with ISTC. Our goal is to expand their access to STEM careers by broadening their skill sets and networks, and with 88% of our 1600 students in the 2021-2022 year reporting this was their first time with a mentor, we are accomplishing just that. Programs like ISTC are an access point to address a system wide challenge, and we recognize that within programming there are barriers to participation as well.

For some of our partner schools, costs have proven to be a barrier. There have been concerns in regards to not having enough funds for students to travel to Chicago, for our Showcase Event, as some teachers had to fundraise themselves. We are aware of how cost can impede our school partners and prevent some schools from participating in our program. From this, we have several partial scholarships available for our schools to break down funding barriers as well as helping to provide scholarships and cover transportation measures to come to our showcase. Furthermore, within our 6x3 Project, we cover the costs of transportation, provide laptops and lunch, and a stipend for participation. ISTC meets students where they are and seeks to provide resources within their current environment to boost them to success.

Access to STEM education looks beyond traditional science, technology, engineering, and math and new access points need to be created in order to explore interdisciplinary STEM education. To increase these interdisciplinary areas, we have partnered with AP research and AP Global Capstone classes. These classes, in turn, allow for a more diverse mentorship pool and increase touchpoints to career and academic paths that may be brand new to students. These classes also allow for students to engage in education and relationships within the intersection of STEM and areas such as political science, gender studies, criminal justice, and more that also may be of personal experience to them.

A majority of students that participated in our STEM Challenge and Mentor Matching Engine programs are seniors and juniors in high school. We are looking to increase the number of students that are in their freshman and sophomore year. These implementation measures include adding new classes such as introductory sciences, science clubs, and areas outside of advanced placement classes. We are also excited to be moving into the middle school space in the summer of 2023 with our new iteration of the 6x3 Project. By adding those groups of students in the future, this would enable our growth in targeting younger students in order for them to learn more about STEM in their earlier year before reaching high school.

STAKEHOLDER/TEACHER BUY-IN

Across the landscape of education and STEM experiences, stakeholder and teacher buy in continues to be a critical component of program success. Within ISTC programs, teachers perform the most important role in the process of student learning. They are looking to see growth in their students, and from our surveys we can say that we have been successful in helping their students grow and improve their ability to identify and solve problems. Our program provides networking opportunities for students to meet professionals in the field, foster new relationships with their peers, and help imagine themselves as working professionals solving real world problems. We work with teachers to ensure they believe in our concepts and help facilitate conversations with mentors in order to ease their experience.

Increasing the amount of classes the Mentor Matching Engine platform is embedded in comes with the learning curve of connecting with educators who are new to the STEM space or do not have a background in science. Teachers already are at risk from burnout from the amount of responsibilities they juggle, and we aim to make the onboarding process for new schools as seamless as possible. Over the years, we have created teacher professional development sessions, to understand the scope and sequence of our programming as well as provide learning opportunities for outside engagement. Our newest initiative in this outreach space is our new Professional Development Series we are launching from November 2022 through Spring 2023. These sessions are in collaboration with outside organizations to bring new learning strategies and implementations into the classroom while also helping to bridge the gap in education for our teachers. We want to imbue our mission and culture onto those associated with our STEM Education initiatives to ensure that buy in is maximized and learning is centered.

TRAUMA-INFORMED EDUCATION

Creating education pathways and relationships that are rooted in trauma-informed practices is the biggest push in our education system. We believe there is power in the partnership of learning in an environment that is safe, predictable, and nurturing. Within trauma-informed practices, there needs to be multiple touchpoints in access to education for both our students and mentors. In order for our students to have access to mentorship in a safe environment, mentors must attend training in Best Practices and Diversity, Equity, and Inclusion practices. These trainings cover communication examples, how trauma shows up in the classroom, how to build trust across differences, and reframes empathy in a way that de-centers the self. The work involved in our trauma worked coaligns around creating structure for our DEIA space.

08 LOOKING FORWARD

With every year of iteration the idea of trying, piloting, and taking a risk on new things has helped ISTC Education grow and learn substantially. Over the past few years, components of every program have been reshaped to respond to changing needs within our community. It is with this energy that the team continues to pursue new partnerships, structures, and programmatic decisions.

The coming summer will mark another inaugural opportunity, as we welcome our first ever cohort of middle school students. With support from CME Group Foundation, ISTC Education will run a 6x3 Project cohort with Chicago middle school students. Our community is excited to be expanding into middle school programming, as research supports a need for earlier exposure to STEM experiences.

As we continue to set our sights ahead, we are keeping our eye on a few key trends. The first being a focus on STEAM over STEM. We are starting to see some major shifts in STEM education which is now outlining more classes than just regular STEM classes, but also the arts have also started to integrate into STEM as 'STEAM'. Lyn D. English says that "STEAM education is gaining traction in some nations and could be seen as another approach to increasing learner access to STEM through targeting students' interest in the arts." She argues that the addition of the arts could provide new disciplinary learning opportunities and provide real-world impart that could draw in more diverse student interests.

Climate is also a topic of interest for ISTC. As we know, climate change is not an issue of the future, it is a relevant, and pressing problem in today's world. As our society works to equip the innovators of tomorrow, it is essential that conversations about climate happen now. ISTC is a leader in problem based programming that prepares students to tackle real issues with critical social and soft skills. It is with this combination of urgency and expertise that ISTC is looking to expand program offerings to include the newest initiative, The ISTC Climate Series.



▲ A North Chicago Community High School student visiting AbbVie

The ISTC Climate series is set to highlight components of climate action and justice within the state of Illinois. Focused topics can include but are not limited to issues involving water, air, environmental justice, clean energy, conservation, sustainability, and carbon footprints. Selection of the climate project would be decided with the designated corporate partners and community participants. ISTC and partner organizations will work to solidify experts in the field to serve as mentoring guides for students tackling the project. ISTC Education is actively seeking partners to support the Climate Series and amplify the critical conversations around climate change.

Community remains a guiding participant in the work we hope to accomplish. ISTC is working closely with local institutions, museums, and nonprofits to landscape and support STEM education around IL. We have evaluated our team capacity and are positioning ourselves as partners to local and statewide initiatives.

The ISTC Education team is eager to continue this journey in Illinois with the support of our partners and supporters statewide.

THANK YOU

ISTC Education's work over the last 10 years would not have been possible without the support of our community. From students and teachers who embrace programming with excitement, to mentors and partners who devote time and energy to every classroom they support, to our champions, advocates, and funders who continue to support ISTC every year, we are humbled by the devotion and partnership each of you contribute.

Special thank you to USG for your generous contribution in honor of ISTC Education's 10 year impact.

Thank you for taking action to secure a stronger, more inclusive talent pipeline here in Illinois.

SCHOOLS BY YEAR

2013-2014

CHICAGO VOCATIONAL CAREER ACADEMY • HINSDALE CENTRAL HIGH SCHOOL • ILLINOIS MATH & SCIENCE ACADEMY • INSTITUTO HEALTH SCIENCES CAREER ACADEMY • LANE TECH COLLEGE PREPARATORY HIGH SCHOOL • LINDBLOM MATH & SCIENCE ACADEMY • MUCHIN COLLEGE PREPARATORY HIGH SCHOOL • NILES NORTH HIGH SCHOOL • OAK PARK AND RIVER FOREST HIGH SCHOOL • PALATINE HIGH SCHOOL • THORNTON HIGH SCHOOL • WAUKEGAN HIGH SCHOOL • WHEELING HIGH SCHOOL

2014-2015

CHICAGO VOCATIONAL CAREER ACADEMY • DEPAUL COLLEGE PREPARATORY HIGH SCHOOL • GLENBROOK SOUTH HIGH SCHOOL • HARLAN COMMUNITY ACADEMY • HINSDALE CENTRAL HIGH SCHOOL • HOLY TRINITY HIGH SCHOOL • ILLINOIS MATH & SCIENCE ACADEMY • INSTITUTO HEALTH SCIENCES CAREER ACADEMY • LAKE VIEW HIGH SCHOOL • LINDBLOM MATH & SCIENCE ACADEMY • MAINE SOUTH HIGH SCHOOL • MINOOKA HIGH SCHOOL • MUCHIN COLLEGE PREPARATORY HIGH SCHOOL • NAPERVILLE NORTH HIGH SCHOOL • NILES NORTH HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • OAK PARK AND RIVER FOREST HIGH SCHOOL • PALATINE HIGH SCHOOL • PRAIRIE CENTRAL HIGH SCHOOL • STEVENSON HIGH SCHOOL • URBANA HIGH SCHOOL • VON STEUBEN METROPOLITAN SCIENCE CENTER • WASHINGTON COMMUNITY HIGH SCHOOL • WAUKEGAN HIGH SCHOOL • WHEELING HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2015-2016

AMBOY HIGH SCHOOL • CHICAGO VOCATIONAL CAREER ACADEMY • DOWNERS GROVE NORTH HIGH SCHOOL • DOWNERS GROVE SOUTH HIGH SCHOOL • EVANSTON TOWNSHIP HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY • ILLINOIS MATH AND SCIENCE ACADEMY • INSTITUTO HEALTH SCIENCE CAREER ACADEMY • ITW DAVID SPEER ACADEMY • JULIAN HIGH SCHOOL • LAKE VIEW HIGH SCHOOL • LINDBLOM MATH AND SCIENCE ACADEMY • MAINE SOUTH HIGH SCHOOL • MUCHIN COLLEGE PREP • MUNDELEIN HIGH SCHOOL • NEW TRIER HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • OAK PARK AND RIVER FOREST HIGH SCHOOL • PALATINE HIGH SCHOOL • PROSPECT HIGH SCHOOL • RICH EAST HIGH SCHOOL • SCHURZ HIGH SCHOOL • VON STEUBEN METROPOLITAN SCIENCE CENTER • WASHINGTON COMMUNITY HIGH SCHOOL • WHEELING HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2016-2017

BLOOMINGTON HIGH SCHOOL • CHICAGO VOCATIONAL CAREER ACADEMY • CICS LONGWOOD ACADEMY • CORLISS HIGH SCHOOL • DOWNERS GROVE HIGH SCHOOL • EISENHOWER HIGH SCHOOL • ELK GROVE HIGH SCHOOL • EVANSTON TOWNSHIP HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY • HIGHLAND PARK HIGH SCHOOL • ILLINOIS MATH AND SCIENCE ACADEMY • INSTITUTO HEALTH SCIENCES CAREER ACADEMY • ITW DAVID SPEER ACADEMY • LAKE VIEW HIGH SCHOOL • LINDBLOM MATH AND SCIENCE ACADEMY • MACARTHUR HIGH SCHOOL • MUCHIN COLLEGE PREPARATORY HIGH SCHOOL • NAPERVILLE CENTRAL HIGH SCHOOL • NAPERVILLE NORTH HIGH SCHOOL • NILES NORTH HIGH SCHOOL • NILES WEST HIGH SCHOOL • NORMAL COMMUNITY HIGH MCLEAN • PROSPECT HIGH SCHOOL • SENN HIGH SCHOOL • NORMAL WEST HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • OAK PARK AND RIVER FOREST HIGH SCHOOL • PALATINE HIGH SCHOOL • PHOENIX MILITARY ACADEMY • SOLORIO ACADEMY HIGH SCHOOL • SAINT VIATOR HIGH SCHOOL • VON STEUBEN METROPOLITAN SCIENCE CENTER • WASHINGTON COMMUNITY HIGH SCHOOL • WHEELING HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2017-2018

BARTLETT HIGH SCHOOL • BLOOMINGTON HIGH SCHOOL • CHICAGO HIGH SCHOOL FOR AGRICULTURAL SCIENCES • CHICAGO TECH ACADEMY HIGH SCHOOL • CORLISS HIGH SCHOOL • DEERFIELD HIGH SCHOOL • DOWNERS GROVE NORTH HIGH SCHOOL • EAST ST. LOUIS HIGH SCHOOL • ELK GROVE HIGH SCHOOL • EVANSTON TOWNSHIP HIGH SCHOOL • FOREMAN COLLEGE & CAREER PREPARATORY HIGH SCHOOL • GLENBARD WEST HIGH SCHOOL • GRAYSLAKE CENTRAL HIGH SCHOOL • GRAYSLAKE NORTH HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY • HIGHLAND PARK HIGH SCHOOL • INSTITUTO HEALTH SCIENCES CAREER ACADEMY • ITW DAVID SPEER ACADEMY • LAKE VIEW HIGH SCHOOL • LAKE ZURICH HIGH SCHOOL • LINDBLOM MATH AND SCIENCE ACADEMY • MUCHIN COLLEGE PREP • MUNDELEIN HIGH SCHOOL • NAPERVILLE CENTRAL HIGH SCHOOL • NAPERVILLE NORTH HIGH SCHOOL • NORMAL COMMUNITY HIGH SCHOOL • NORMAL WEST HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • OAK PARK AND RIVER FOREST HIGH SCHOOL • PALATINE HIGH SCHOOL • PERSPECTIVES MATH AND SCIENCE ACADEMY • PROSPECT HIGH SCHOOL • SOLORIO ACADEMY HIGH SCHOOL • VON STEUBEN METROPOLITAN SCIENCE CENTER • WASHINGTON COMMUNITY HIGH SCHOOL • WHEELING HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2018-2019

BACK OF THE YARDS COLLEGE PREPARATORY HIGH SCHOOL · BARTLETT HIGH SCHOOL · BUFFALO GROVE HIGH SCHOOL · CHICAGO HIGH SCHOOL FOR AGRICULTURAL SCIENCES · CHICAGO TECH ACADEMY HIGH SCHOOL · CHICAGO VOCATIONAL CAREER ACADEMY · CORLISS HIGH SCHOOL · CRANE MEDICAL PREP HIGH SCHOOL • DISNEY II MAGNET HIGH SCHOOL · DOWNERS GROVE NORTH HIGH SCHOOL · ELK GROVE HIGH SCHOOL · EVANSTON TOWNSHIP HIGH SCHOOL · FOREMAN COLLEGE & CAREER PREP · GLENBARD EAST HIGH SCHOOL · GLENBARD NORTH HIGH SCHOOL · GLENBARD WEST HIGH SCHOOL · GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY · HIGHLAND PARK HIGH SCHOOL · HUBBARD HIGH SCHOOL · ILLINI BLUFFS HIGH SCHOOL · INFINITY MATH SCIENCE & TECHNOLOGY HIGH SCHOOL · INSTITUTO HEALTH SCIENCES CAREER ACADEMY · JONES COLLEGE PREP · LAKE VIEW HIGH SCHOOL · LANE TECH COLLEGE PREP HIGH SCHOOL · LIBERTYVILLE HIGH SCHOOL · LINDBLOM MATH AND SCIENCE ACADEMY · MICHELE CLARK MAGNET HIGH SCHOOL · MUCHIN COLLEGE PREP · NORTH CHICAGO COMMUNITY HIGH SCHOOL · PALATINE HIGH SCHOOL · PERSPECTIVES MATH AND SCIENCE ACADEMY · PLANO HIGH SCHOOL · MUCHIN COLLEGE PREP · NORTH SCHOOL · SARAH E. GOODE STEM ACADEMY · SOLORIO ACADEMY HIGH SCHOOL · VERNON HILLS HIGH SCHOOL · VON STEUBEN METROPOLITAN SCIENCE CENTER · WASHINGTON COMMUNITY HIGH SCHOOL · WHEELING HIGH SCHOOL · WHITNEY YOUNG MAGNET HIGH SCHOOL · WILLIAMSFIELD HIGH SCHOOL

2019-2020

BARTLETT HIGH SCHOOL • CHICAGO HIGH SCHOOL FOR AGRICULTURALSCIENCES • CHICAGO TECHACADEMY HIGH SCHOOL • COLLINSVILLE HIGH SCHOOL • DISNEY II MAGNET HIGH SCHOOL • DOWNERS GROVE NORTH HIGH SCHOOL • DOWNERS GROVE SOUTH HIGH SCHOOL • EAST ST. LOUIS HIGH SCHOOL • ELK GROVE HIGH SCHOOL • FOREMAN COLLEGE & CAREER PREPARATORY HIGH SCHOOL • GLENBARD EAST HIGH SCHOOL • GLENBARD NORTH HIGH SCHOOL • GLENBARD WEST HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY • HIGHLAND PARK HIGH SCHOOL • ILLINI BLUFFS HIGH SCHOOL • INFINITY MATH SCIENCE & TECHNOLOGY HIGH SCHOOL • INSTITUTO HEALTH SCIENCES CAREER ACADEMY • JOHN HANCOCK COLLEGE PREP • JONES COLLEGE PREP • LANE TECH COLLEGE PREP HIGH SCHOOL • LIBERTYVILLE HIGH SCHOOL • LINDBLOM MATH AND SCIENCE ACADEMY • MUCHIN COLLEGE PREPARATORY HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • NORTHSIDE COLLEGE PREPARATORY HIGH SCHOOL • PALATINE HIGH SCHOOL • PEKIN HIGH SCHOOL • PERSPECTIVES MATH AND SCIENCE ACADEMY • PHOENIX MILITARY ACADEMY • PLANO HIGH SCHOOL • RICHWOODS HIGH SCHOOL • ROUND LAKE HIGH SCHOOL • SOLORIO ACADEMY HIGH SCHOOL • VERNON HILLS HIGH SCHOOL • VON STEUBEN METROPOLITAN SCIENCE CENTER • WASHINGTON COMMUNITY HIGH SCHOOL • WHEELING HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2020-2021

BARTLETT HIGH SCHOOL • CHICAGO HIGH SCHOOL FOR AGRICULTURAL SCIENCES • CHICAGO TECH ACADEMY • DISNEY II MAGNET HIGH SCHOOL • DOWNERS GROVE NORTH • DOWNERS GROVE SOUTH • EAST ST. LOUIS HIGH SCHOOL • EISENHOWER HIGH SCHOOL • FOREMAN HIGH SCHOOL • GLENBARD EAST HIGH SCHOOL • GLENBARD NORTH HIGH SCHOOL • GLENBARD WEST HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY HIGH SCHOOL • ILLINI BLUFFS HIGH SCHOOL • INFINITY HIGH SCHOOL • JOHN HANCOCK COLLEGE PREP • JOHN HERSEY HIGH SCHOOL • JONES COLLEGE PREP • KANKAKEE HIGH SCHOOL • LAKE VIEW HIGH SCHOOL • LANE TECH COLLEGE PREP • LIBERTYVILLE HIGH SCHOOL • LINDBLOM MATH & SCIENCE ACADEMY • MADISON HIGH SCHOOL • MAINE EAST HIGH SCHOOL • NORTH CHICAGO COMMUNITY HS • NORTHSIDE COLLEGE PREP • PALATINE HIGH SCHOOL • PEKIN COMMUNITY • PERSPECTIVES MATH & SCIENCE ACADEMY • PHOENIX MILITARY ACADEMY • PLANO HIGH SCHOOL • RICHWOODS HIGH SCHOOL • ROCK ISLAND HIGH SCHOOL • ROUND LAKE HIGH SCHOOL • SOLORIO HIGH SCHOOL • UNITED TOWNSHIP HIGH SCHOOL • VERNON HILLS HIGH SCHOOL • VON STEUBEN HIGH SCHOOL • WAUKEGAN HIGH SCHOOL • WHEELING HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

2021-2022

BARTLETT • BRIMFIELD HIGH SCHOOL • CHICAGO HIGH SCHOOL FOR AGRICULTURAL SCIENCES • CHICAGO TECH ACADEMY • DISNEY II MAGNET SCHOOL • DISTRICT 214 • DOWNERS GROVE NORTH/SOUTH • EAST ST. LOUIS • FOREMAN COLLEGE AND CAREER • GAGE PARK HIGH SCHOOL • GLENBARD EAST HIGH SCHOOL • GLENBARD NORTH HIGH SCHOOL • GLENBARD WEST HIGH SCHOOL • GWENDOLYN BROOKS • HOFFMAN ESTATES HIGH SCHOOL • HUBBARD HIGH SCHOOL • HUNTLEY HIGH SCHOOL • JOHN HANCOCK COLLEGE PREP • JONES COLLEGE PREP • THOMAS KELLY COLLEGE PREP • LANE TECH HIGH SCHOOL • LIBERTYVILLE HIGH SCHOOL • VERNON HILLS HIGH SCHOOL • LINDBLOM MATH & SCIENCE ACADEMY • LYONS TOWNSHIP • MADISON SENIOR HIGH SCHOOL • MAINE EAST HIGH SCHOOL • MATHER HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • NORTH GRAND • NORTHSIDE COLLEGE PREP • PALATINE HIGH SCHOOL • PEKIN COMMUNITY • PERSPECTIVES MSA • PHOENIX MILITARY ACADEMY • PLANO HIGH SCHOOL • RICHWOODS HIGH SCHOOL • RICKOVER NAVAL ACADEMY • ROUND LAKE HIGH SCHOOL • SOLORIO ACADEMY • VON STEUBEN HIGH SCHOOL • WAUKEGAN HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL • PREP SCIENCE AMBASSADORS • ELK GROVE HIGH SCHOOL

2022-2023

BARTLETT HIGH SCHOOL • BRIMFIELD HIGH SCHOOL • CHICAGO TECH ACADEMY • CRANE • DISNEY II MAGNET • DOWNERS GROVE SOUTH HIGH SCHOOL • EAST ST. LOUIS SR. HIGH SCHOOL • EISENHOWER HIGH SCHOOL • ELK GROVE HIGH SCHOOL • FREMD HIGH SCHOOL • GLENBARD EAST HIGH SCHOOL • GLENBARD NORTH HIGH SCHOOL • GLENBARD WEST HIGH SCHOOL • GWENDOLYN BROOKS COLLEGE PREPARATORY ACADEMY HIGH SCHOOL • HUNTLEY HIGH SCHOOL • JOHN HANCOCK • JOHN HERSEY • JONES COLLEGE PREP • LANE TECH COLLEGE PREP HIGH SCHOOL • LIBERTYVILLE HIGH SCHOOL • LINDBLOM MATH & SCIENCE ACADEMY • LYONS TOWNSHIP • MADISON SENIOR HIGH SCHOOL • MAINE EAST HIGH SCHOOL • MATHER HIGH SCHOOL • MUNDELEIN HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • NORTHSIDE COLLEGE PREP • PERSPECTIVES/IIT MATH & SCIENCE ACADEMY • PLANO HIGH SCHOOL • PREP SCIENCE AMBASSADORS • RICHWOODS HIGH SCHOOL • ROLLING MEADOWS HIGH SCHOOL • SARAH E GOODE STEM ACADEMY • SOLORIO ACADEMY HIGH SCHOOL • UPLIFT COMMUNITY HIGH SCHOOL • VERNON HILLS HIGH SCHOOL • WALTER PAYTON COLLEGE PREP • WAUKEGAN HIGH SCHOOL • WHEELING HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL • WILLIAMSFIELD HIGH SCHOOL

6X3 SCHOOLS BY YEAR

2021

CHICAGO MATH AND SCIENCE ACADEMY • INTRINSIC DOWNTOWN CAMPUS • LINDBLOM HIGH SCHOOL • MUCHIN COLLEGE PREPARATORY HIGH SCHOOL • NOBLE STREET COLLEGE PREPARATORY HIGH SCHOOL • NORTH CHICAGO COMMUNITY HIGH SCHOOL • NORTH-GRAND HIGH SCHOOL • PHOENIX MILITARY ACADEMY • RAUNER COLLEGE PREPARATORY HIGH SCHOOL • UIC COLLEGE PREPARATORY HIGH SCHOOL • WALTER PAYTON COLLEGE PREPARATORY HIGH SCHOOL

2022

ART IN MOTION • BACK OF THE YARDS COLLEGE PREPARATORY HIGH SCHOOL • BEACON ACADEMY • BUTLER HIGH SCHOOL • CHICAGO BULLS PREPARATORY • CHICAGO HIGH SCHOOL FOR AGRICULTURAL SCIENCES • HORIZON MATH AND SCIENCE ACADEMY • HORIZON SOUTHWEST ACADEMY • INFINITY HIGH SCHOOL • KENWOOD ACADEMY • LINCOLN PARK HIGH SCHOOL • LINDBLOM HIGH SCHOOL • NORTH LAWNDALE COLLEGE • NORTHSIDE PREPARATORY HIGH SCHOOL • SOUTHLAND COLLEGE PREPARATORY HIGH SCHOOL • SULLIVAN HIGH SCHOOL • WELLS COMMUNITY HIGH SCHOOL • WESTINGHOUSE HIGH SCHOOL • WHITNEY YOUNG MAGNET HIGH SCHOOL

COMPANY PARTNERS BY YEAR

2013-2014

MOTOROLA SOLUTIONS • BAXTER INTERNATIONAL • THE GREATEST GOOD • NORTHROP GRUMMAN • ILLINOIS INSTITUTE OF TECHNOLOGY'S INSTITUTE FOR FOOD SAFETY AND HEALTH

2014-2015

BAXTER INTERNATIONAL • COMED • ILLINOIS STATE UNIVERSITY'S CENTER FOR RENEWABLE ENERGY • MICROSOFT • MOTOROLA MOBILITY • MOTOROLA SOLUTIONS • NORTHROP GRUMMAN • TGG GROUP • TAKEDA PHARMACEUTICALS

2015-2016

THE ABBVIE FOUNDATION • ARGONNE NATIONAL LABORATORIES • BAXTER INTERNATIONAL • ILLINOIS STATE UNIVERSITY'S CENTER FOR RENEWABLE ENERGY • MICROSOFT • MOTOROLA MOBILITY • MOTOROLA SOLUTIONS • NORTHROP GRUMMAN • TGG GROUP • TAKEDA PHARMACEUTICALS

2016-2017

THE ABBVIE FOUNDATION • ADM • BAXTER INTERNATIONAL INC. • HORIZON PHARMA • ILLINOIS STATE UNIVERSITY'S CENTER FOR RENEWABLE ENERGY • LOYOLA UNIVERSITY CHICAGO • MICROSOFT • MOTOROLA MOBILITY FOUNDATION • MOTOROLA SOLUTIONS FOUNDATION • NORTHROP GRUMMAN • STATE FARM • TAKEDA PHARMACEUTICALS

2017-2018

THE ABBVIE FOUNDATION • ADM • BAXTER INTERNATIONAL INC. • CATERPILLAR • DYNEGY • HORIZON PHARMA • ILLINOIS STATE UNIVERSITY'S CENTER FOR RENEWABLE ENERGY • LOYOLA UNIVERSITY CHICAGO • MICROSOFT • MOLEX • MOTOROLA MOBILITY FOUNDATION • MOTOROLA SOLUTIONS FOUNDATION • NORTHROP GRUMMAN • STATE FARM • TAKEDA PHARMACEUTICALS

2018-2019

THE ABBVIE FOUNDATION • ADM • ALLSTATE • ASTELLAS • BAXTER INTERNATIONAL INC. • CATERPILLAR • CISCO • CME GROUP • DELL • DYNEGY • HORIZON PHARMA • IBM • ILLINOIS STATE UNIVERSITY'S CENTER FOR RENEWABLE ENERGY • LOYOLA • UNIVERSITY CHICAGO • MICROSOFT • MOLEX • MOTOROLA MOBILITY FOUNDATION • MOTOROLA SOLUTIONS FOUNDATION • NORTHROP GRUMMAN • STATE FARM • TAKEDA PHARMACEUTICALS

2019-2020

THE ABBVIE FOUNDATION • ADM • ALLSTATE • BAXTER INTERNATIONAL INC. • CATERPILLAR DIGITAL • CATERPILLAR PEORIA • CME GROUP • HORIZON THERAPEUTICS • MICROSOFT • MOTOROLA MOBILITY FOUNDATION • MOTOROLA SOLUTIONS FOUNDATION • NORTHROP GRUMMAN • VISTRA

2020-2021

THE ABBVIE FOUNDATION • ADM • ALLSTATE • BAXTER INTERNATIONAL INC. • CATERPILLAR DECATUR • CATERPILLAR DIGITAL • CATERPILLAR PEORIA • CME GROUP • HORIZON THERAPEUTICS • JOHN DEERE • MICROSOFT • MOTOROLA MOBILITY FOUNDATION • MOTOROLA SOLUTIONS FOUNDATION • NORTHROP GRUMMAN • VISTRA

2021-2022

THE ABBVIE FOUNDATION • ADM • BAXTER INTERNATIONAL INC. • CATERPILLAR DIGITAL • CATERPILLAR PEORIA • CDK GLOBAL • CME GROUP • HORIZON THERAPEUTICS • MICROSOFT • MOTOROLA MOBILITY FOUNDATION • NORTHROP GRUMMAN • PAYLOCITY • RADIO FLYER • SHURE • VISTRA

2022-2023

THE ABBVIE FOUNDATION • ADM • BAXTER INTERNATIONAL INC. • CATERPILLAR DIGITAL • CATERPILLAR PEORIA • CDK GLOBAL • CME GROUP • HORIZON THERAPEUTICS • MICROSOFT • MILWAUKEE TOOL • MOTOROLA MOBILITY FOUNDATION • NORTHROP GRUMMAN • PAYLOCITY • SHURE • VISTRA



EDUCATION

from the classroom to the real world