GENERATION SUCCESS

Harnessing Boston's Collective Energy to Prepare Students for College, Career and Life

GENERATION SUCCESS

The Boston Opportunity Agenda
A Historic Education Partnership

In 2017, the Boston Opportunity Agenda convened a group of stakeholders from Boston's education ecosystem. We gathered leaders from Boston's district, charter and Catholic schools, the City of Boston, high education institutions, foundations and nonprofits throughout the City to define college, career and life readiness – and get clear on what our kids need to succeed.

In sketching out expectations for the future based on insight into the industry, education and civic landscapes, the group recognized that the future, particularly today, is characterized by its dynamism and that any singular vision narrows how we expect our graduates will live. So instead, the group coalesced around a set of forces that shape trajectories for career, college and life. These forces inform the skills and beliefs students will need to succeed in this fast-shifting environment. Testing in practice and against research, we created definitions and measurements to understand what it means to be college, career and life ready in Boston.

To fulfill the needs of young people, we have launched Generation Success, a city-wide campaign in collaboration with schools, out-of-school programs, parents and private industry groups across Boston, to prepare students for college, career and life after high school. We're putting our collective energy behind Boston's young people so they can discover, explore and prepare for the universe of opportunities in our city and region. We want students to learn about who they are as individuals – including their unique strengths and interests – so they can design their own futures.

We know that students learn through curiosity, exposure and hands-on experience. We also know that private industry, in partnership with educators and nonprofit organizations, is taking a leadership role in advancing student success, which in turn creates a pipeline of students entering into the workforce after high school or college. Access to learning opportunities is imperative to empowering and inspiring students and strengthening our communities and economy – and the business community has the chance to make an even greater impact on their success.

We understand from our research that business leaders in Boston need a roadmap to help illustrate the types of efforts that youth would find valuable, so, as a part of this work, we have created this "bright spot toolkit" to high-quality programs in Boston that are run by businesses and private industries in the area. The hope is to share examples of the great work being done to prepare students for college, career and life and motivate other businesses to follow suit in creating programs that students find valuable. We invite businesses as well as out-of-school providers to submit their programs as we continue to expand this toolkit.

Please visit the Generation Success website, gensuccess.org, to learn more about preparation opportunities for life after high school. Over time, more content and resources will be added to the site. If you have questions, or would like more information about creating a high-quality program for Boston students, reach out to me at Kristin.McSwain@bostonopportunityagenda.org.

Cheers,

Kristin McSwain
Executive Director, Boston Opportunity Agenda

The Boston Opportunity Agenda
A Historic Education Partnership

Autodesk

Student-focused programs

Autodesk is committed to empowering students and educators globally.

CONTACT

Kellyanne Mahoney, *Youth Program Specialist*
kellyanne.mahoney@autodesk.com
www.autodesk.com

How We Support Students

Since Autodesk moved to Boston's Seaport in 2016, we have collaborated with the City of Boston and the Boston Public Schools on a variety of programs that expose both students and educators to in-demand skills directly related to jobs of the future.

For example, the "Future of Construction" program exposes K–12 students to exciting career paths and builds their understanding about how the construction industry is leveraging technology to reimagine how we can build more and build better, while having less negative impact on the planet. This program also leads students through the design thinking process as they imagine, design and create a solution for a real-world problem under the guidance of industry mentors. We use in-person field trips across various industry sites, as well as virtual [experiences / lessons / education] through a series of interactive webinars.

When the COVID-19 health crisis caused many youth-serving organizations to abruptly shift to a virtual format, some local groups accessed Autodesk programs to supplement their offerings. For example, this summer, Boston Centers for Youth and Families (BCYF) provided 400 teens in its SuperTeens youth leadership program a distance learning experience where they focused on the introduction of new technology as part of potential career exploration. They were challenged to work together in groups to design a BCYF Community Center of the Future.

> **"We were inspired by the 'Future of Construction' weeklong series to create a challenge unique to our program. Our SuperTeens were challenged to work together in groups to design a BCYF Community Center of the Future. We found the program to be accessible to both teens and adults with varied technological skills. Our teens were introduced to careers and technical skills related to design, construction, city planning and advocacy. They also learned soft skills for future employment that included collaboration, public speaking and project management."**
>
> KATE HENNIGAN, PROGRAM MANAGER, BOSTON CENTERS FOR YOUTH AND FAMILIES

Beyond Future of Construction, Autodesk also supports Digital Ready's "Year 13," a no-cost, accelerated pathway for recent Boston high school graduates into college and future career paths related to architecture, engineering and construction technology. We offer students, educators and academic institutions free

access to the same tools and workflows that construction, architecture, manufacturing and engineering professionals use every day. And, also, we are an active member of BoSTEM's Advisory Committee, a multi-sector partnership meant to expand hands-on STEM learning opportunities for Boston youth. We are committed to preparing students to start rewarding careers and make positive impacts in the world – and this commitment extends into their early careers.

> **"We hope to continue to improve and refine our programs, so that the great potential of our city's homegrown talent can be fully actualized, and so that we can together build a better Boston for all.**

Our Unique Approach

None of this would be possible without the deep and meaningful relationships we have formed with local nonprofit organizations, such as Boston Children's Museum, MassRobotics, Boston Society for Architecture, West End House, the Design Museum, Mbadika, Boston Debate League, the Timothy Smith Network, Boston Centers for Youth & Families and the United Way of Massachusetts Bay and Merrimack Valley. We are grateful for our ability to work together with a network of talented and caring adults across sectors and industries in support of Boston's next generation of innovators.

How the Program Prepares Students for College, Their Careers and Life

Expectations for the "jobs of the future" that students will someday need to meet are evolving at a rate that schools and youth-serving nonprofits are struggling to keep pace with. In order to help bridge the opportunity gap that many of the city's children face, we need to take an "all hands on deck" approach and roll up our sleeves and innovate alongside the city's educators, students and youth-serving nonprofits. We also need to model the collaboration we hope to see in our city's schools and classrooms.

This aligns with Autodesk's commitment to supporting schools, educators and, ultimately, students to navigate the gap between the old and new economies. This type of engagement also provides the opportunity for us to gain insight into how to best educate and open career pathways into industry for students. This is important not only to Autodesk, but also to our customers who continue to face a skilled labor shortage, including the construction industry, with 80 percent of construction firms recently reporting that they are having a hard time filling hourly craft positions representing the bulk of the construction workforce.

In fall 2019, Autodesk teamed up with Suffolk Construction, MassRobotics and the Boston Public Schools to organize a series of field trips to explore exciting possibilities for the future of construction with a group of fifth graders from the Harvard-Kent Elementary School in Charlestown.

Boston Society for Architecture

In partnership with Apprentice Learning

"Design Challenge: A Space for Your Future Self" brought hands-on design to students' home, with live instruction, mentorship and actual design tools that ultimately transformed their bedrooms into design studios.

CONTACT

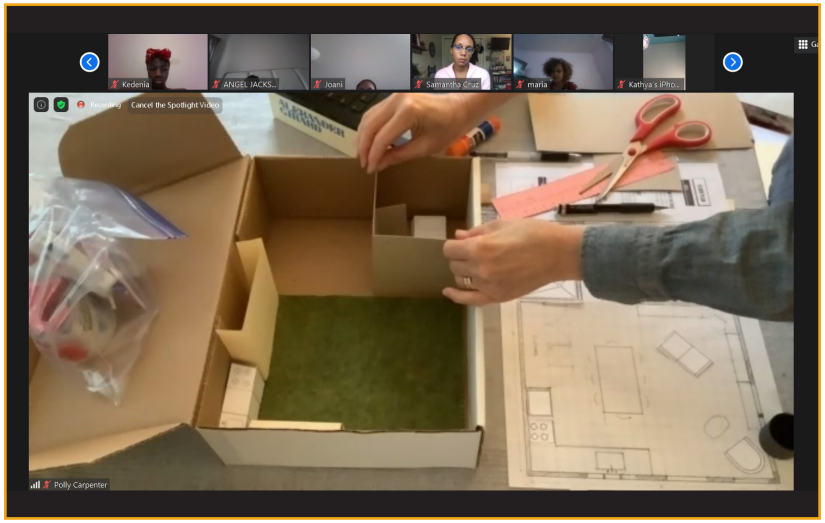
Polly Carpenter *FAIA, Director of Public Programs*
Boston Society for Architecture
pcarpenter@architects.org
www.architects.org

How We Support Students

During the summer of 2020, 40 young women from Boston Public Schools preparing to enter ninth grade took part in an experiment – to create and deliver a hands-on design experience. Design is a creative, collaborative process where people experiment, take risks, make mistakes and learn from each other and about themselves. "Design Challenge: A Space for Your Future Self" brought hands-on design to students' homes with live instruction, mentorship and actual design tools that ultimately transformed their bedrooms into design studios.

The design challenge complemented and supported Apprentice Learning's City Summer Internship. Its theme, "Blueprint for Success," had participating students exploring their strengths, weaknesses, interests and curiosities to inform their career and life choices going forward. Apprentice Learning asked the Boston Society for Architecture (BSA) to create a complementary hands-on design project, where students could craft and build at a time when all learning was happening through a screen due to the COVID-19 pandemic.

We tailored the design curriculum to this age group and to Apprentice Learning's methodology that addresses both personal and career discovery. We developed a curriculum where students would consider how design and the design of space influence the way they feel. The result was an expression of themselves in the future, including a design of a future apartment. To align with real design projects, students were paired with another student acting as their client, whom they had to understand, design and build for.



Students experience a model building tutorial via Zoom

At the end of the project, students presented their designs in a Zoom celebration with a "jury" of professional architects from Boston. We are continuing to work with Apprentice Learning during the school year and hope to expand the project to Boston Public Schools.

How the Program Prepares Students for College, Their Careers and Life

This program gives students a glimpse into the design careers, but also expands their thinking on who they are and who they want to be when they grow up. The organizational structure that is the foundation of the Design Process is a tool that can be used the rest of their lives in any setting whether personal or professional.

> **"I learned that being an architect requires a lot of thinking and planning out before you go to the construction site. You have to know what you're doing and plan it out before you start building."**
>
> STUDENT PARTICIPANT

Our Unique Approach

Our approach centers around gathering, learning and building together as individuals rather than teacher to student.

The curriculum also aligns with real design projects as students were paired with another student acting as their client, whom they had to understand, design and build for. The process was a mix of questions, brainstorming, sketching, building and sharing; having a multi-phased approach helps students to build up their ideas, accept mistakes and find out which parts of the process they shine in, are interested in or are challenged by.

How We Did It

Each year, we collaborate with our long-time partner, Apprentice Learning, whose mission is to introduce middle school students to career options and connect them with area professionals as they begin to design their futures.

Shifting their summer's two-week design workshop into a fully virtual setting required the BSA and Apprentice Learning to collaborate in a new way. We spent the month of June designing a digital version of the curriculum, publishing it on an online platform, Milanote, and working with Apprentice Learning to collaborate on schedules, learning objectives and the overall structure of the Zoom program. Alongside the digital curriculum was a matching physical kit, delivered to each student for the hands-on portion of the workshop. The kits provided students with step-by-step instructions designed to match the online classes, office supplies and a variety of building materials – fabrics, papers, cardboard, etc. The contents of the kit were delivered in boxes, which when emptied, became the space where students would build their apartment designs.

We also engaged with two architects from local Boston firms. Each architect shared their work experiences with the students in Zoom sessions. The first session focused on how an architecture firm approaches the design process in their work with examples of built projects, while the second session focused on the architect's journey from student to working professional, with an engaging Q+A throughout for the students.

> **"Making the apartments and floor plans were my favorite parts of the presentation because I got to do hands-on work instead of just talking, so the presentation felt very interactive."**
>
> STUDENT PARTICIPANT

Rapid7

Rapid7 BoSTEM Teacher Externship

Externships are designed to equip teachers with experience and a social network of fellow educators that addresses real-world project and problem-based tasks that guide learning experiences for students as they enter into a rapidly changing world.

CONTACT

Joseph Rosenbaum, *Director, BoSTEM*
United Way of Massachusetts Bay and Merrimack Valley
jrosenbaum@supportunitedway.org
www.rapid7.com

How We Support Students

In the summer of 2020, Rapid7 hosted a virtual externship for nine Boston Public School teachers through a partnership with the United Way. Teachers learned about cyber security during this two-day remote event, including ways to increase students' interest in STEM through meaningful classroom activities. At the end, each teacher gave a brief presentation about their experience and what they will bring back to the classroom.

How We Did It

One aspect that makes this externship experience unique is that the Rapid7 presenters are part of a Rotation Program where recent college graduates spend 18 months working in a variety of areas across the business, including Software Development, People Strategy, Finance, Marketing and User Experience. Participants of this program are referred to as "Rotatoes." As part of this program, Rotatoes participate in four hours of community service a month and spent six months developing the BoSTEM Cyber Security Externship. Rotatoes were able to partner with more senior employees at Rapid7 to offer a wide range of perspectives. The externship was intentionally designed to address the barriers teachers face when teaching STEM to students.

During the first day with the teachers, the program focused on laying the groundwork for this externship, covering what Rapid7 does, describing the main products offered, and highlighting the warm workplace culture. Rotatoes then gave a high-level introduction to what cyber security is, including its history, current cyber security threats and ways that people and organizations can protect themselves from being compromised.

Throughout the program, teachers not only heard from members of the Rotation Program, but also from more experienced Rapid7 employees who spoke about their STEM journey and gave guidance on STEM engagement as well as potential career opportunities for students. Part of the time was also spent diving into why students drop out of STEM classes around the same age and ways interest can be built up and sustained in the classroom.

Across both days of the externship, we included several lessons based on activities that the teachers could take back to their classrooms. For each lesson, we had the teachers run through the activity on their own, and then we discussed how they could implement these activities in

their classrooms to inspire students to explore a STEM-focused career path. We also shared a folder with the resources needed for the teachers to run these activities on their own.

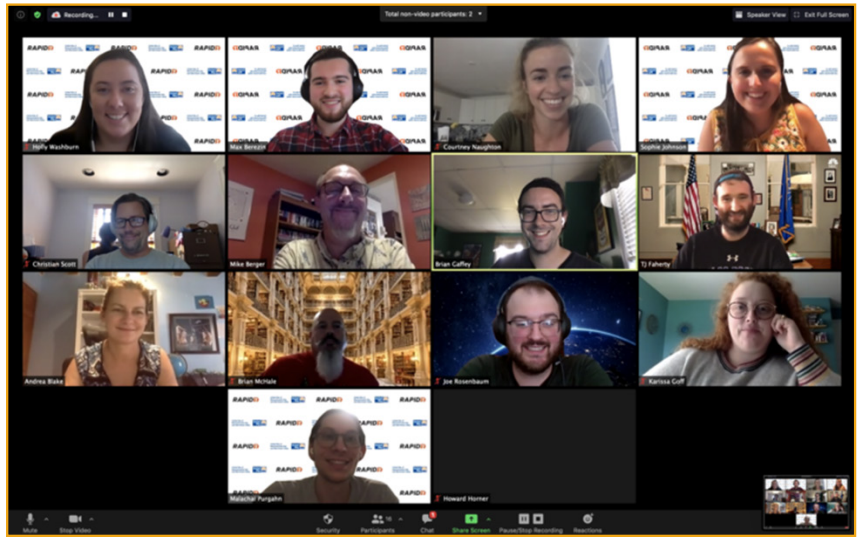
To give an example, one of the activities was called "Hacker Hunting." The Rotatoes developed this activity based on the daily work experience of a cyber security professional. Students practice their deductive reasoning and pattern matching skills to correlate common digital security weaknesses with events in server logs to determine how a data breach occurred. The activity encourages students to think critically about their own "digital hygiene" as they see how such weaknesses can be exploited and mitigated. During the externship, the Rotatoes demonstrated how to run this activity. The teachers were then tasked with solving the activity themselves. Based on the feedback the Rotatoes received from teachers after the externship, the activities were a highlight for the majority of participants.

How the Program Prepares Students for College, Their Careers and Life

We equip Boston Public School classroom teachers to have a positive impact on all of their students' STEM success.

We have already heard from multiple teachers that they will be applying our activities in their curriculum and lessons, and we hope that this will bring an increased understanding of cyber security and help to continue increasing interest in STEM.

> **"This was a spectacular experience, and I appreciated all of those who put it together. I am sure it wasn't easy and the efforts are applauded! The group of Rotatoes were amazing and they truly captured the experience of what it is like to work in the Cyber Industry."**
>
> BOSTON PUBLIC SCHOOL TEACHER AND BOSTEM TEACHER EXTERNSHIP PARTICIPANT



BoSTEM Externship Teachers connecting with a guest speaker who brought the viewpoint of a senior software engineer. He shared with everyone his journey, talked about how he is currently engaged with his local community and provided numerous STEM resources for the teachers to use in the classroom.

Elkus Manfredi Architects

Career Studio

Career Studio introduces students to the field of architecture and the wide range of careers in the design and building industry from our work as architects, to engineering, construction and many other associated career paths.

CONTACT

Hal Munger *AIA, LEED AP, Associate*

hmunger@elkus-manfredi.com

www.elkus-manfredi.com

How We Support Students

Boston Public School (BPS) teachers tell us that when a student is asked "what do you want to be?" the answer is typically either a doctor or nurse, a law enforcement officer, or a service industry worker, which is a direct reflection of their restricted awareness. We want every student to have an expansive sense of choice –whether or not architecture is the direction a student ultimately selects for themselves. Our Career Studio program introduces students to the field of architecture and the wide range of careers in the design and building industry – from our work as architects, to engineering, construction and many other associated career paths.

Career Studio has involved a BPS teacher "externship" program where we welcome teachers from different grade levels over the summer to visit us and learn in more detail what architecture is all about. And we have also hosted field trips to speak to students at two BPS high schools earlier this year to discuss the role architects play in the development that they see in their own neighborhoods. We brought together several members from our firm, individuals from a minority-owned consulting firm and the Boston Planning and Development Agency to discuss the process of how a building gets built in Boston and who is involved in the work.

No matter the specific program, when we first meet students, they are often unsure what it means to be an architect. One thing we share through Career Studio is that architects are part of a larger team consisting of interior designers, graphic designers, marketing professionals, visualization staff, accountants and human resources personnel. We also work with consultants including structural, mechanical and civil engineers and landscape architects.

> **"Working with the teachers from Boston Public Schools is a wholly enriching experience for our team of architects, designers, fabricators and virtual artists. Not only do we get to share our passion for the field of architecture, but we always find inspiration in the experience, knowing these motivated and engaged educators will take what they learned back to their classrooms and perhaps inspire the next generation of architecture professionals."**
>
> EMILY PAPARELLA AIA, LEED AP BD+C, CPHC | VICE PRESIDENT

We teach students that architecture is critical thinking and problem solving, a

process with many steps that ultimately leads to a thoughtfully designed solution. A solution that ideally will satisfy several interested parties – your client, the community and other interested parties.

We teach about design being a process of many steps and introduce design concepts such as scale. Architects can design at the scale of a building, on large projects like planning an entire neighborhood, or small details, like choosing the type of doorknob and hinges for a door.

How the Program Prepares Students for College, Their Careers and Life

We have learned that students of color have a hard time envisioning themselves in an industry like architecture because there are so few people who look like them. As part of our Studio Career program, we encourage students to become interested in architecture and the built environment, and to bring their own ideas and backgrounds to the conversation.

We also have our college interns mentor our high school interns, offering a sounding board whenever there are questions about what it is like being in architecture school as a young student. Because this year's internships were virtual, we created a series of video calls where the students were able to interact with one another and our team. By all accounts, the interactions were meaningful.

Our Unique Approach

Architecture is a multifaceted profession – one that is not easily taught in secondary schools. Our mentor programs introduce this wide field to students, often for the first time. The exciting reality is that the profession involves so many things that students are interested in today:

- Use of technology in 3D printing and fabrication of building materials
- Design role in sustainability and resiliency
- Climate change and the part that designers play in the problem and the solution
- Affordable housing and inclusive cities
- Social equity and equality

How We Did It

Our relationship with the United Way has helped us connect with BPS. The Boston Society of Architects (BSA) also supports and encourages our student mentoring initiatives. For example, the BSA asked us to participate in a high school internship program this summer. We welcomed two rising seniors from Boston Green Academy, involving them in various projects and aspects of the profession.

We treat each BPS Externship as if it were a design exercise for a new project where we study the program's stated goals and map out the path that will

A panel including architects and an official from the Boston Planning and Development Agency discuss with high school students the process with which projects are built in their neighborhoods.

achieve the best outcome. Usually, this means pulling from across the firm to bring in individuals with diverse backgrounds that are best suited to the program's specific needs. One of the points we like to emphasize is that architecture (and the broader built environment) is a team endeavor, so we may pull in consultants to help us in developing the best possible presentation.

With the team in place, we have a series of brainstorming sessions and begin to divide the work amongst ourselves, making sure that each team member is fully aware of their role and what is expected from them. A dry run is usually held a few days before the event, and the last details are ironed out. With that, we are ready to share all the great information we have related to the program's objectives with the participating teachers.

How We Hope to Expand

One of our goals is to connect with a broader array of Boston communities to bring more people into the conversation. By involving students who are historically underrepresented in architecture, we hope more students will become interested in an architecture career and be part of broadening the personal experiences that inform the design process.

BPS teachers participating in the Summer Externship program listen as they tour the firm's office. They are being shown the 3D Fabrication Lab, where models are created using a variety of materials.

One way we can achieve this is to build upon the relationships we have with BPS to create long-term relationships with students, teachers and administrators. Encouraging our industry colleagues to participate in a similar way is also important.

FableVision Learning

Animation - Design and Engineering Middle School Career Exploration

The goal of our Creativity to Careers program is to engage students in creative career explorations at the middle school level to increase high school graduation rates and most importantly, help them prepare for jobs.

CONTACT

Jane Reynolds, *President*

jane@fablevision.com

www.fablevisionlearning.com

How We Support Students

We help middle school students explore creative careers through FableVision Learning's certified Middle School Animation and Engineering Design Career Technical Education (CTE) programs. These two CTE certification programs are uniquely designed to support teachers who may be outside their comfort zones in this field and provide students with exposure to careers and real-world experiences.

In partnership with our Boston-based sister company FableVision Studio and Peter H. Reynolds, award-winning author, illustrator, educator and our founder, we created Animation-ish software. Animation-ish includes an associated curriculum and animation lessons, to introduce students to the skills that they will need in animation and digital arts.

> **"I've been in teacher heaven these past three weeks. Animation-ish is truly a superb piece of experiential educational software. My students and I are spellbound by the software, clever lessons, lesson delivery and activities. I would truly give it my highest recommendation to any and all."**
>
> **SHELLEY MANN, TEACHER SANTA ROSA COUNTY, FLA.**

We designed the FabMaker Studio 2D/3D design and fabrication software for students to explore design thinking, engineering process and practices, engineering careers and the evolving nature of engineering and innovation. During the 18-week program, students tackle hands-on projects and are mentored by engineers with support from the National Academy of Engineering. Students cover a range of projects exposing them to an array of engineering breakthroughs. Starting with the study of the first engineer in 2500 BC, students create scaled 3D models of the first pyramid. From there, they continue to explore the design process, tackling areas across the industry spectrum from production to electrical to mechanical projects.

The research-based FabMaker Studio software emerged from the national Make To Learn initiative – a collaborative of nonprofit, educational and for-profit organizations spearheaded by the University of Virginia. To tackle the disruption in the STEM education and career pipeline, the initiative has been building innovative resources to reach students much earlier in their learning journey, while their potential STEM identity is still forming. The coalition has spent the past 10 years building this research-based initiative to integrate STEM education into

elementary and middle school curricula in more effective ways – with support from, among others, National Science Foundation, U.S. Department of Education, MacArthur Foundation, Motorola and the Bill & Melinda Gates Foundation.

> **“There is no substitute for teaching solids than by students actually creating 3D shapes. Not only were they planning their designs in the software, but also strengthening their spatial relations skills while putting the physical shape together.”**
>
> KAREN WOLFF, DIGITAL LEARNING COACH, WALPOLE PUBLIC SCHOOLS

How the Program Prepares Students for College, Their Careers and Life

With the Animation CTE Program, students are not only introduced to the principles of animation, but also to a wide range of roles in a studio, including directing, sound, storyboarding and animating, as well as the soft skills required to succeed in working in a studio. Students see real-life projects and learn to work collaboratively as they learn client communication and delivery of assignments. Students culminate the project with a presentation-ready digital portfolio highlighting their creative work across elements of digital media.

With the Engineering Design CTE Program, students are introduced to engineers from the past and present, including young women from the Engineer Girl initiative of the National Academy of Engineering. Students explore the excitement of problem solving and making a difference to today’s global challenges. The software itself has been proven to shift perceptions.

FabMaker Studio research, funded by the Noyce Foundation, demonstrated efficacy in shifting students’ attitudes about STEM education, including a 30+ percent increase in interest in STEM learning after 8 weeks of the program. Additionally, after participating in the program, students reported positive change in

Students learned the FabMaker Studio software to create this glowing cityscape, a diorama, during a summer camp at the Lighthouse Art Center in Florida.

relationships with adults, relationships with peers, perseverance and critical thinking.

How We Did It

To develop these programs, in addition to a host of other professional development opportunities for teachers, FableVision Learning understands the need to collaborate with partners and address important issues facing schools.

We started with an analysis of the issues surrounding career development and found that districts were facing problems with completion rates in high school. From there, we identified middle school as critical to create a pipeline for high school. It was revealed that oftentimes high schools specialize in specific tracks and students are frequently uncertain about what courses to choose, and thus what school to attend. Another issue that surfaced was that students were not prepared with basic knowledge and skills to complete their high school courses. This was validated with conversations with District CTE Directors, especially for animation.

As we created our programs, we knew we needed to emulate the real world the best we could within time and financial constraints of middle schools. We chose industry partners to work with to develop exciting materials from real-world examples. For animation, this was with the talented team at FableVision Studios, a professional digital media company in Boston, who were able to share staff experiences plus client projects. For Engineering Design, we collaborate with the National Academy of Engineering, who have provided introductions to working engineers across industries.

> **“FabMaker Studio has given our entire staff the opportunity to improve our design thinking skills as we work on creating more and more exciting and interactive educational opportunities.”**
>
> MAX WASHINGTON, YOUTH PROGRAM DEVELOPMENT COORDINATOR, COMMUNITY MIRACLES IN ACTION

FabMaker Studio allows engineering design to take off.

Harvard Medical School MEDscience

High School STEM Program

HMS MEDscience is an innovative high school biology course immersing students in simulated medical emergencies. Our science curriculum motivates students to think critically, communicate effectively and work collaboratively in teams. We bring classroom learning into the real world with hands-on experiences, giving them the confidence they need to succeed.

CONTACT

Julie Joyal, R.N., M.Ed

Executive Director, HMS MEDscience

Julie_Joyal@hms.harvard.edu

www.HMSMEDscience.org

How We Support Students

The HMS MEDscience program consists of a semester-long, credit bearing, advanced biology course with a standards-aligned curriculum for high school students. We connect classroom lessons in human biology with real-life medical simulations. The curriculum is broken into 7 units, with each unit focusing on a different body system and accompanied by a clinical skills lesson. Students work with a lifelike mannequin, "STAN," to build problem solving and critical thinking skills in an authentic and (slightly) stressful emergency room environment. STAN is a computer-controlled, adult mannequin that breathes and has a pulse and blood pressure. Students interact with STAN by carrying on a two-way conversation to determine a medical history and evaluate physical exam findings. Ultimately, the students arrive at a hypothesis or "diagnosis" and save their patient. These applied learning experiences bring science to life.

Our Unique Approach

The MEDscience curriculum engages and inspires students through hands-on experiences. Students work through real-life scenarios based on medical conditions that commonly plague their own family members, like diabetes, heart disease and addiction. Our students are also exposed to inspiring leaders in the healthcare community that encourage students to find a passion and seek mentorship.

The program also addresses the equity and inspiration gaps in STEM education. We work with the Boston Public Schools (BPS) to identify schools and districts in need. We also provide teacher training to strengthen partnering schools' effective STEM education.

Additionally, MEDscience helps build 21st century skills (critical thinking, problem solving, teamwork and communication). We encourage students to share ideas even if they might be "wrong." This unique pedagogy has proven to help students grow and enhance these skills.

How We Did It

We are fortunate to have access to Harvard Medical School's students, faculty and researchers, as well as personnel from the Harvard Dental School. We are partners with the surrounding teaching hospitals, such as Brigham and Women's, Beth Israel Deaconess and Children's Hospital. Harvard Medical School provides us with generous in-kind support and space on the quad where our

simulations lab is located. In addition, we partner with foundations such as Nellie Mae, Vertex, David and Linda Shaheen Foundation, The Hamilton Company, Joanne L. Shrontz Family Foundation, United Way of Mass Bay (BoSTEM), Paul &Phyllis Fireman Charitable Foundation, Thermo Fisher, Smith Family Foundation, Boston Foundation, Boston After School and Beyond, Linsey Foundation and the Gilbert Family Foundation. Cumulatively, our collaborators and partners allow us to deliver a rigorous and relevant health-care-based program to our underserved students.

> **"Unlike school, where everyone is in it for their own gain and is highly competitive—this classroom fostered teamwork, where everyone helped improve each other's understanding."**
>
> MEDSCIENCE STUDENT PARTICIPANT

How We Hope to Expand

The goal at HMS MEDscience is expansion into every Boston Public School. In the spring of 2020, we welcomed Boston International Newcomers Academy, Brighton High School and Boston Latin Academy. This year, 2020-2021, we are looking forward to accessing and including many more schools both within Boston and in more rural areas through our new remote telemedicine platform. Piloted this summer, our telemedicine program brought MEDscience into the virtual space and into the homes of students in China, Dubai, Malawi and more! We are thrilled to engage diverse students from around the world.

How the Program Prepares Students for College, Their Careers and Life

Right here in Boston, students are in need of high-quality STEM programming. With a telemedicine platform, students from all schools now have the chance to problem solve, think critically think and work as teams to diagnose

High school students get hands on training at Harvard Medical School's simulation lab.

their virtual patient. HMS MEDscience is committed to maintaining a strong presence in BPS and continuing to address the achievement, opportunity and inspiration gap among Boston youth.

MEDscience is addressing the critical, nationwide need to inspire diverse youth to join STEM fields. Students from Boston Public Schools are not being prepared for college and future STEM careers. BPS students lag behind their peers on the science MCAS exams. Of all science tech/engineering test takers across all grades, only 26% of BPS students scored proficient (20%) or advanced (6%) compared to 53% of their peers in the rest of the state. Despite these data, Boston students consistently demonstrate high interest in STEM fields.

Our goal is to achieve the following critical educational milestones with a growing student population:

- **Inspiration gap in STEM:** student self-reported increase in science interest and engagement, science career knowledge and healthcare career interest
- **Biology-related classroom knowledge:** students can describe the major functioning of seven body systems and can explain common major health issues
- **21st Century skills:** students will have an increased confidence in future success and student reported increase in the ability to work in teams, communicate, solve problems and think critically

Diverse students at MEDscience are prepared to be critical thinkers, problem solvers and collaborators. Very few (if any) high school students have participated in a medical simulation. They are placed in a challenging environment and given the tools to succeed. The most valuable takeaway from the program is self-confidence. Students at MEDscience find their voice, and this is arguably the key to success.

> **“Yesterday, at the dinner table, I actually found myself explaining the situation to my parents and how we solved it. I am so proud of what we did as a group.”**
>
> MEDSCIENCE STUDENT PARTICIPANT

EdVestors

Bloomberg Philanthropies Arts Internship (BAI) program

The Bloomberg Philanthropies Arts Internship (BAI) program provides rising high school seniors with work experience at select cultural institutions along with work readiness and college preparation training. By connecting students with enriching summer internships at local arts organizations, we work to give young residents the tools they need to excel in high school, college and beyond.

CONTACT

Jeremy Gooden, Internship & Program Coordinator, EdVestors

gooden@edvestors.org

https://www.edvestors.org

How We Support Students

The Bloomberg Arts Internship (BAI) program provides Boston Public School (BPS) high school students with full-time, paid summer employment in arts and culture organizations, working in arts administration, education and production. Throughout the two-month program, interns attend cohort meetings dedicated to executive coaching, oral and written communication skills, postsecondary opportunities and Boston's arts and culture resources. Interns learned to develop a success mindset, set personal and professional goals and received one-on-one tutoring to draft a college application. They also participated in arts-related workshops led by institutions such as the Institute of Contemporary Art and Huntington Theatre Company. This program connects with EdVestors' ongoing work to support quality arts education through BPS Arts Expansion, as well as our work around career pathways.

How We Did It

Thanks to funding from Bloomberg Philanthropies, Boston became the latest city to join the BAI program in 2019, following New York City, Philadelphia and Baltimore. BAI Boston program partners include the Boston Private Industry Council, 826 Boston, the College Advising Corps and Muadi B. Dibinga Unlimited. This close collaboration as well as the network of job placements at 12 arts and culture organizations provide students with a meaningful work experience, skill-building and adult mentorship throughout the summer.

> **"My favorite part of the orientation process was getting to know the people I was working with. It was nice to see different personalities and learn about how everyone expresses their creativity."**
>
> NORTH END MUSIC & PERFORMING ARTS CENTER INTERN, ASHLEY, SPEAKS ON HER BAI ORIENTATION WEEK EXPERIENCE

How the Program Prepares Students for College, Careers and Life

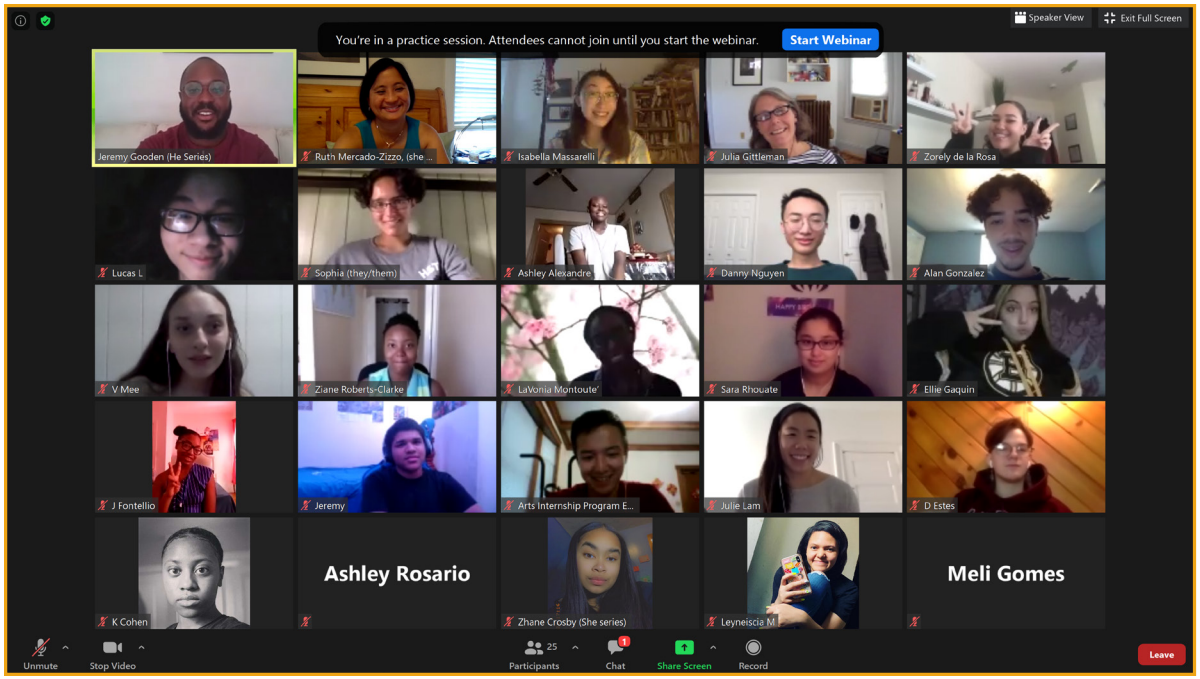
This summer, interns worked remotely from home and used virtual platforms, such as Zoom and web conferencing, to engage in program activities. While all interns faced technological barriers, pandemic-related stressors and other personal challenges to varying degrees, the network of organizations and program partners worked together

to solve technology challenges, provide social-emotional support and resources and provide a space where interns could express themselves and be heard. At the end of the program, most student participants shared that they:

- are clearer about what they want to do after high school/college and how to get there;
- understand the behaviors to demonstrate in the workplace for success; and
- are better able to identify challenges and use the information available to develop effective solutions.

How We Hope to Expand

Bloomberg Philanthropies has committed to supporting this program in 2021, with the opportunity to expand the number of internships available for Boston Public Schools students. Depending on the status of the ongoing pandemic, the program hopes to be able to incorporate some in-person learning and experiences in 2021.



This summer, BAI interns worked remotely from home and used virtual platforms, such as Zoom and web conferencing, to engage in all program activities.

www.generationsuccess.com
Kristin McSwain, *Executive Director, Boston Opportunity Agenda*
Kristin.McSwain@bostonopportunityagenda.org

GENERATION SUCCESS