

THE BASS

June 28, 2019

1700 Convention Center Drive
Miami Beach, Florida 33139

To the Office of the Mayor and Miami Beach City Commission,

As the central coordinator for the STEAM Plus program we submit to you the final report for 2019. The STEAM Plus program ran from January 2019 through June 2019 and was a city and county-wide effort to enrich the educational system in Miami Beach by engaging students with the subjects of science, technology, engineering, art and math. The program partnered with six Miami Beach public schools (Biscayne Elementary, Fienberg Fisher K-8 Center, Nautilus Middle School, Miami Beach Senior High, North Beach Elementary and South Pointe Elementary School) with six prestigious cultural institutions (The Bass, Jewish Museum of Florida-FIU, Miami City Ballet, New World Symphony, The Wolfsonian-FIU and Young Musicians Unite) giving students unprecedented access to the arts in their educations.

If you have any questions or concerns regarding this report please feel free to contact Sara Ryan, The Director of Individual Giving at sryan@thebass.org, or (786) 477-6026.

Sincerely,



Kylee Crook
Director of Education
The Bass

Enclosure:

Final Progress Report

Support Document: Detailed program descriptions by school

Support Document: letters from school teachers

Support Document: Program pictures from partnership

STEAM Plus Pilot Program Final Report

I. General Summary

From January 2019 through June 2019, the City of Miami Beach Commission and Mayor Dan Gelber, in partnership with the Miami-Dade County Public Schools System (M-DCPS), integrated arts and culture into the core curriculum of local public schools with the launch of the STEAM (Science, Technology, Engineering, Art and Math) Plus pilot program.

The idea of the STEAM Plus program was conceived from a conversation between Mayor Gelber and M-DCPS Superintendent Alberto M. Carvahlo around how the city of Miami Beach could further support their public schools. Given Superintendent Carvahlo's county-wide goal for all M-DCPS to attain a STEAM designation by 2021, the conversation led to a proposed plan of action wherein local cultural institutions would be invited to become official STEAM partners to Miami Beach public schools in order for the schools to receive necessary points towards their STEAM Designation.

To receive a STEAM designation, schools must meet an extensive rubric of requirements including working with a minimum of two community partners, at no cost to the school, during school hours. The City of Miami Beach's STEAM Plus program serves as a bridge between the schools and the partnering institutions, thus alleviating pressure on the STEAM coordinator at each school. Additional support was also provided by the program's managing organization, The Bass, whose coordinator was able to work closely with the schools in preparing for their M-DCPS STEAM designation visits, STEAM partnerships, STEAM designation applications and submissions to ensure they receive a gold, silver, bronze or participant designation.

By engaging students around the subjects of Science, Technology, Engineering, Art and Math, the STEAM Plus program aims to spark an interest and life-long appreciation of the arts and sciences in children from an early age. Science, Technology, Engineering, Art and Math all involve creative processes, however, none use just one method for inquiry and investigation. Research has demonstrated the importance of encouraging artistic engagement within education. A student involved in the arts is four times more likely to be recognized for academic achievement. Additionally, low-income students, who are highly engaged in the arts, are more than twice as likely to graduate from college than their peers with no arts education. Based on this research, teaching relevant, in-demand skills that will prepare students to become innovators in an ever-evolving world is paramount, not only for the future of these students but for the future of our community.

The initiative included six prestigious Miami cultural partners: The Bass, Jewish Museum of Florida – FIU, Miami City Ballet, New World Symphony, The Wolfsonian – FIU and Young Musicians Unite. These institutions were then paired with six public schools in Miami Beach: Biscayne Elementary, Fienberg Fisher K-8 Center, Miami Beach Senior High, Nautilus Middle School, North Beach Elementary and South Pointe Elementary School. The partnership between Miami's renowned cultural institutions and the city's local public schools was an effort to create the next generation of inventors, explorers, innovators, artists and leaders. At the suggestion of the Knight Foundation, The Bass' education team was approached to act as the central coordinator for this program and serve as the liaison between the cultural institutions and public schools.

Each of the participating Miami Beach Public Schools worked together to create a strong educational network and the office of the Mayor and commission was deeply involved in the process. Mayor Dan Gelber communicated his support by visiting the schools for several celebratory events showcasing the students achievements. He appeared at a STEAM Zine interaction led by The Wolfsonian-FIU, a student concert at the City of Miami Beach Youth Music Festival, the Art and Cultural Day at North Beach Elementary, a concert at Miami Beach Senior High under the guidance of the New World Symphony and attended Family Day at The Bass which showcased students works created with several partnering organizations. Students and school administrators expressed how happy and honored they felt to see the city's involvement in their education. Below is a summary of the unique STEAM Plus programming delivered by each of the participating cultural organizations. While not every school received instruction from all institutions, if the program is maintained all grade levels will experience all institutions over the course of their K-12 education, and all participating schools will earn their M-DCPS STEAM Designation.

THE BASS partnered with Biscayne Elementary School, Fienberg Fisher K-8 Center, Miami Beach Senior High, Nautilus Middle School, North Beach Elementary School, and South Pointe Elementary School. The museum engaged with students to think creatively to solve real-world problems such as sea level rise, climate change and poverty while integrating arts and science. Students created multiple projects: 3-D models of animals in their habitats, DNA bracelets, a community quilt and costume pieces for a theatrical show and experimented with oil and water to create beautiful watercolor works. Total students served: 1,365; Total instructional hours: 291

JEWISH MUSEUM OF FLORIDA - FIU worked with Miami Beach Senior High School, North Beach Elementary School and South Pointe Elementary School. The Museum helped students discover Kitchen Lithography and the historical stain glass windows in the Jewish Museum of Florida-FIU. Students used geometry to determine how glass must be placed to fit certain diameters and printmaking to publicize important works. Total students served: 345; Total instructional hours: 37

MIAMI CITY BALLET partnered with Biscayne Elementary School, Fienberg Fisher K-8 Center, Nautilus Middle School and South Pointe Elementary School. The Ballet worked to create a movement and design curriculum. Educators worked with students in the classroom to promote physical expression, creative thinking and exploration. Students performed choreography for their families and classmates promoting group interaction, creativity, body awareness and classroom etiquette while collaborating with other subject areas. Total students served: 284; Total instructional hours: 36

NEW WORLD SYMPHONY worked with Miami Beach Senior High School to expand their indoor orchestra, providing a creative approach toward activating the imaginations of youth through musical activities focused on classroom engagement and discovery of classical music. Guided by the New World Symphony Fellows, students were taught: pattern recognition, rhythmic relationships, musical form and use musical skills to demonstrate mathematical concepts related to fractions, ratios and pattern combination analysis. The symphony's involvement culminated in a student performance at the New World Center for families and friends. Total students served: 35; Total instructional hours: 12

THE WOLFSONIAN - FIU partnered with creative writing students at Nautilus Middle School using zines as a platform for exploration and expression. Students selected a topic within the field of environmental

responsibility which they researched and addressed in their zine. Students took a field trip to The Wolfsonian-FIU and had the opportunity to showcase their work at the Miami Zine Fair in April. Total students served: 35; Total instructional hours: 12

YOUNG MUSICIANS UNITE worked with Fienberg Fisher K-8 Center, Miami Beach Senior High School and Nautilus Middle School to provide an educational look into the science behind creating music through coding, recording, technology and practice. Students gained access to world-class producers, lighting/sound technicians and other professionals in the industry who gave insight on the importance of STEAM Plus in the music world. The educators assisted schools struggling to maintain their instruments and equipment by teaching students how to repair their own instruments and supplying the tools needed to continue growing each program. Students were given multiple opportunities throughout this partnership to perform for the community at the school and local festivals. Total students served: 116; Total instructional hours: 213

The STEAM Plus pilot program experienced great success engaging thousands of Miami-Dade County Public School students in core curriculum by integrating arts and culture. The program appears to have been well-run and well-received by program participants, teachers and partners. Teachers reported better interactions with classroom material after children participated in the program. One teacher shared that after comparing test results from the previous year, it was evident that this year's students achieved higher scores after participating in a STEAM Plus beading workshop led by The Bass, in which students created a DNA model.

As a result of the funding received from The City of Miami Beach, the STEAM Plus pilot program was able to do the following:

- Reached 2,180 students, spanning all grade levels
- Exposed students to 683 hours of instruction from cultural professionals
- Significantly increase access to arts-based learning experiences by providing professional teaching artists for 229 visits to the school.

II. Evaluation

Evaluation of the STEAM Plus program was done by administering surveys to students, parents, teachers and school administrators. Surveys were delivered to students via physical paper survey in their classroom. Parents, school administrators and teachers were sent a link to complete a survey through SurveyMonkey. Students had an 11% completion rate, administration had a 48% completion rate and parents had a 3% completion rate.

Moving forward, several strategies have been identified to avoid the low return rates seen this year. Surveys will be pre-approved by the Intergovernmental Affairs and Grants Administration office for Miami Dade County Public Schools, ensuring school support for mandatory distribution to students and parents. Participating schools will also be given an application form in which teachers list their contact information allowing coordinators to directly contact teachers to inform them about activities and better work with their schedule. Schools will continue to provide their academic Year At A Glance and Point Of Inquiry forms to better expand on the materials being taught in the classroom. The program will also be tailored to occur around the state testing season using rolling dates to avoid any interference.

The following summarizes the perspectives of the participating students, parents, teachers and administrators.

Students Perspective:

- 91% of students usually or definitely enjoyed their interactions with the partnered organization
- 86% of students usually or definitely felt that the program helped them do better in school.
- 88% of students usually or definitely felt that they learned something new through the partnership sessions.

Parents Perspective:

- 75% of parents either agreed or strongly agreed that the program helped their child do better in school
- 80% of parents either agreed or strongly agreed that their child enjoyed participating in the program
- 95% of parents either agreed or strongly agreed that they would like their child's school to continue to participate in the STEAM Plus program

When asked to report on what was most helpful or appreciated, parents noted the following:

- *"Exposing my child to the arts is helpful as she wouldn't otherwise have that opportunity in school as a kindergartner."*
- *"That my child was exposed to various programs to expand her world."*
- *"I like that the kids are exposed to art, science, etc in and integrated way. I think it's a better way to learn."*
- *"Gave opportunities for my child to participate in Science, Technology, Engineer, Arts and Mathematics and improved her critical thinking, increased her curiosity and knowledge in these fields, allowed her work in teams, improved her problem solving skills, improved her creative thinking, over all better prepared her for a bright and productive future."*

School Administration Perspective:

- 83% of the school staff either agreed, or strongly agreed, that the program helped their students do better in school
- 83% of school staff either agreed, or strongly agreed, that the school should continue to participate in the STEAM Plus program

When asked to comment on the program, school administration wrote the following:

- *"The projects and artistry produced by the guest speakers and students were profound, cultural and historically based masterpieces. The students thoroughly enjoyed it!"*
- *"The students greatly benefited from these partnerships. They were exposed to creative and critical thinking activities otherwise not included in general content requirements."*
- *"The students were able to bridge multi-disciplinary activities with arts and academic studies."*

- *“Students became aware of the connection between literature and the sciences and how pervasive scientific studies and learning about the environment connects to all disciplines.”*
- *“Students benefited from the interactions and were able to understand the concepts being learned in the classroom”*
- *“For ESOL students it was beneficial because it improved their reading fluency and comprehension.”*
- *“This program definitely increased the emphasis on doing STEAM Plus activities across grade levels.”*
- *“Our school benefited by receiving support from talented individuals in the areas of music, dance and art.”*
- *“Overall, the participation in science across grade level increased.”*
- *“The support from the different entities as well as the fellow teachers were outstanding as we moved forward throughout the year. Young Musicians United and the New World fellows were amazing!”*
- *“Having a point person to help us with the partnerships. Having the district steam team visit our school and explain a lot of different parts of the process.”*

Teacher’s Perspectives:

- *“YMU [Young Musicians Unite] was a tremendous help in advancing the skills of both my guitar students and my Rock Ensemble. They were there ready to assist in whatever was necessary to help the students acquire the skills required to accomplish the goals of the lessons.”*
– Arnold Paseiro, Band Director, Fienberg Fisher K-8
- *“These interactions allowed my students to better understand the process of creating DNA and RNA sequences. It’s one thing to see it on a projector or in a textbook and another to create one with your hands! By having students solve the sequences then use their cognitive skills to create the replica piece I noticed an increase in understanding. Students were given the tools they’ve never used before. Tools as simple as wire cutters, pliers and scissors! Things these children have not been exposed to. It was a wonderful learning experience. I hope to see Alex [The Bass Teaching Artist] and The Bass again next year! “*
– Dr. Lemas Biology Teacher at Nautilus Middle School

Additional Outcomes

- Over 30 students in this program were nominated by various Miami City Ballet teaching artists to audition for Miami City Ballet’s *Ballet Bus* scholarship program. Out of the selected group, ten students were selected by the Miami City Ballet’s School Director to be on the waitlist for next school year. Their placement is still in progress.
- Five student pieces were selected to display their works at the M-DCPS School Board Administration Building. The art pieces were created during STEAM Plus interactions with The Bass. Board Members, community dignitaries and thousands of visitors will view this high-profile exhibition. The student's work has been up since April 19th and will remain up in the School Board Building until August 22, 2019.

- Fienberg Fisher K-8 Center successfully fulfilled a M-DCPS Authentic Assessment through STEAM interactions with The Bass. In order to offer one or more International Baccalaureate (IB) programmes of education, schools must complete an authorization process, including several authentic assessments.
- Nautilus Middle School students showcased their STEAM Zines at the Miami Zine Fair. The Wolfsonian – FIU presented an exhibition of the STEAM Zines as one of 180 exhibitors to an audience of approximately 4,000 over the course of the weekend-long event.
- New World Symphony concert held on Friday, May 10th at the New World Center showcased the students of Miami Beach Senior High School’s Orchestra after their STEAM Plus interactions.
- Young Musicians Unite organized several community involvement events including concerts at Art and Cultural Day at North Beach Elementary, Youth Music Festival and the STEAM Plus Celebration at The Bass.
- City of Miami Beach officials were invited and visited various STEAM Plus interactions and culminating events, showing support for this program.
 - Miami City Ballet and The Bass culminating event at Nautilus Middle School student performance of Philip Glass and the Loaf of Bread featuring costumes and scenery the students created through their interactions.
 - Mayor Gelber and several commissioners visited The Bass on April 28 for the free Family Day STEAM Plus Celebration where all six schools exhibited their works at the museum and the Miami Beach Senior High School Rock Ensemble for a performance for guests. STEAM Plus family activities and labs were set-up in the Creativity Center. The work was on view from April 28 - May 21, 2019.
 - Art and Cultural Day at North Beach Elementary
 - City of Miami Beach Youth Music Festival at the Bandshell
 - The New World Symphony finale concert which featured Miami Beach Senior High Schools orchestra students
- Through the STEAM Plus pilot program schools were able to expose students to the cultural institutions through field trips and guided tours. Cultural institutions covered the cost for admission and bussing. Students visited:
 - The Bass
 - Jewish Museum of Florida-FIU
 - New World Center
 - The Wolfsonian - FIU
- Over 45 local artists and educators were given the opportunity to work throughout our local schools and cultural institutions through the STEAM Plus pilot program.

III. Challenges

Typical of a pilot program, several unforeseen challenges presented themselves throughout the initiative.

- Finding time and space dedicated for STEAM Plus activities. Often STEAM Plus educators worked with multiple classes at once in an effort to engage as many students as possible. Finding a

space that could hold all the students and allow for interactive arts activities was difficult and often unavailable due to class schedules and testing.

- Because of the state testing schedule, STEAM Plus educators found it difficult to find a convenient time to conduct sessions at the school while having access to the necessary equipment. iPads were often in use and computer labs were not available which affected the Young Musician Unite educator's ability to conduct coding exercises.
- Another area for improvement would be communication between the school STEAM liaisons, participating classroom teachers and the STEAM Plus team. Because of the hefty responsibilities M-DCPS teachers and administrators have, information would often get lost in a chain of communication. STEAM liaisons are school employees selected by the principal to manage their school's STEAM program when applying to become STEAM designated. They are often classroom teachers that have multiple roles with many pressing duties including: IB coordinators, grade-level chairs, professional development coordinators, tutoring and coordinating school field trips/events. This made it difficult for the STEAM Plus coordinator and cultural institutions to disseminate information and materials to teachers, students and parents, including surveys. This resulted in poor survey completion results and parents expressing that they felt uninformed about the program.
- Coordinating meetings with academic school teachers proved difficult due to their overwhelming schedules. Liaisons were often not given access to the lesson plan and pertinent school dates which made it difficult for STEAM Plus educators to make sure their program was cohesive to what was being taught at the time.

IV. Looking Forward

With the remaining funds from the project, The Bass (the managing organization) is currently requesting an extension in order to construct a STEAM Plus Lab at Fienberg Fisher K-8 Center. The STEAM Plus coordinator proposes a vacant storage room at the school be repurposed and converted into a space where STEAM activities can occur with multiple groups of students. The requested extension would also allow for the purchasing of hands-on classroom science materials for each participating school.

For the 2019-2020 school year, Treasure Island Elementary School will join the STEAM Plus program and several additional cultural partners have been added to the educational team: Common Threads, Hack Shack, Holocaust Memorial, Miami Beach Botanical Gardens, Miami Beach Bots, Miami New Drama, Miami Theatre Center and Perez Art Museum Miami.

The STEAM Plus program shows great promise in becoming one of Miami Beach's and Miami Dade County's key initiatives in bettering our public school system. Teachers, students, parents and STEAM Plus educators connected with the program and saw its value for enhancing public education. Students were given unprecedented access to the arts in their education enriching other core subjects, especially: science, technology, engineering and mathematics. This network will continue to grow to create the next generation of inventors, explorers, innovators, artists and leaders being brought together through program events in which students could share their creativity and connect through this new city-wide network which is continuing to grow.