

Report of Survey Results from Fall 2015 C-STEM Youth Commission Retreat

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Background on C-STEM

Communication, Science, Technology, Engineering and Mathematics (C-STEM) is a Houston-based education nonprofit (501(c)(3)) that provides professional training in STEM education to teachers and hands-on, STEM-focused learning opportunities to disadvantaged students in grades PreK-12. C-STEM's mission is to inspire the next generation of innovators and thought leaders by engaging them in exciting hands-on projects solving real world problems to encourage entry into the talent pipeline, bolster self-confidence, and foster a well-rounded mastery of the areas of communication, science, technology, engineering, and mathematics.

C-STEM was created in 2002 to address two challenges facing both the education community and society at-large: The shortage of people prepared to work in STEM-related fields and the growing achievement gap between advantaged and disadvantaged students within public education. Disadvantaged students, namely racial and ethnic minorities and low income students, also are underrepresented in many STEM courses as well as in STEM careers, particularly those relating to engineering and physical science. C-STEM addresses these challenges through the provision of engaging, hands-on learning experiences for students and ongoing support for their teachers.

The C-STEM Youth Commission

In the summer of 2015, C-STEM applied for and received funding from the State Farm Youth Advisory Board to host a year long Youth Commission. The purpose of the Youth Commission is to: Research the problem of low participation in STEM on the part of African Americans and Latinos, with the goal of recommending how C-STEM can recruit and retain more students in its programming; and Raise the profile of STEM education and their own work with C-STEM in their local communities. This project addresses two critical and related problems: the high drop-out rate among African American and Latino students in particular, and the low level of participation of these same students in STEM education and STEM careers. The idea for a Youth Commission came from C-STEM student feedback on the program as well as conversations with C-STEM students.

The Youth Commission is a form of advocacy service-learning in which the ten youths will advance the cause of STEM education in their communities and beyond by, 1) Collaborating as a team to help shape the future direction of C-STEM and improve C-STEM's programming and curricula; and 2) Raising public awareness in their local communities about their work with C-STEM, the achievement and opportunity gap in STEM, and the importance of minority participation in STEM education. To achieve these goals, the Youth Commissioners will work together to set work goals, to define what their final product will be, to decide how to bring their work to their local communities, and then to complete and present their research and final report to the C-STEM board as well as to the Congressional Black Caucus in Washington, DC.

About the C-STEM Youth Commissioners

Ten youths who previously had participated in C-STEM through their schools were selected in the fall of 2015 to participate in the Youth Commission (three had participated in C-STEM for three years, two for two years, and four were in their first year). Of these youths, six are female and four are male (one youth did not answer the question). Two are in 9th grade, two are in 10th grade, and five are in 11th grade. One of the youths is from Michigan and nine are from Texas.

Six of the youths are African American, two are Latino, and one identifies as being of two or more races.

“Hi! I was in CSTEM in 5th grade. I won the Elementary Ambassador & I am now a commissioner for CSTEM!!”

“I am a 17 year old teenager, that loves math and wants to better herself in the science subject. I like participating in events, volunteering, and sports. I am not good at presentations but try my best, shy and quiet but when I want to I can be loud. I like challenges and being in C-STEM is a fun experience I like to share to my family and friends.”

“I am a young lady, looking to learn about anything that will benefit my future - opportunities are something I will always try and consider. My determination is my backbone - if nothing else helps me succeed I know my determination to do so will. I'm looking to expand and network more often, I've kind of been lagging - I'm a junior, I'm a 16 year old - and I like to believe I'm a leader.”

“I like to dance. I like hot wings. I love to read.”

“I want to pursue a career in STEM.”

“I am a junior at Energy Institute High School in Houston, Texas.”

“I am in 9th grade. I enjoy traveling, graphic design, and family oriented activities. I have been to New York, Pittsburgh, Washington D.C., Alaska, Canada, Florida, and multiple Texas cities. In my school, I participate in a show choir group, I am a class representative, and I am also in AP classes. I am also in Girl Scouts.”

“I am a junior at The Roeper School. Extracurricular activities that I participate in are: soccer, basketball, baseball, and robotics. I am also apart of the Detroit Kappa League, which is a leadership development program supported by the Kappa Alpha Psi Fraternity Inc. I like to watch TV, draw, and read good books. I love STEM and I am always thinking of new and crazy robot designs for personal robots and competition robots.”

The Youths' Perspectives on the Fall Retreat

The first event in which the 10 youths selected participated in was a weekend retreat in Houston. During the fall retreat, the C-STEM Youth Advisors participated in a weekend full of activities in Houston, Texas. These activities included an Etiquette Dinner, a Team Building and Ice Breaker Session, a Social Activity, a session about how to engage elected officials, Mock Congressional Meetings, a session on Youth Advocacy, and two opportunities to reflect on the activities. The youths were asked to rank the activities they enjoyed the most, and there was an overwhelming consensus that the Team Building & Ice Breaker session held the first morning was the favorite (90% ranked this as their favorite activity). Other activities the youths enjoyed included the session on how to engage elected officials (80%), the Mock Congressional Meetings (70%), and the Etiquette Dinner (50%).

One youth explained his/her selection saying, “The ice breaker wasn't awkward as I had pictured it would be, it was fun and at the same time we learned more about the persons we would be working with for the next few days. I also enjoyed the Engaging with Elected Officials, because it's not everyday you get to know an elected official/staff personally and that was impressive. As

for the Mock Congressional meeting, it was fun to be able to get to see and get criticized on how to be in a Congressional meeting. It was a whole new experience which I found interesting.”

Conversely, when asked which activities they did not enjoy during the retreat, seven youths selected “Not applicable” and only one youth responded that s/he did not enjoy the Mock Congressional Meetings or the Etiquette Dinner. This youth explained that, “I didn't like the Mock congressional meetings because I felt as if it was an extreme exaggeration of what Congressional members act, not only did it tremendously impacted my overall delivery. The meeting also felt very unorganized...” Other youths were positive about the entirety of the experience, writing, for example, “I enjoyed all of the activities!” and “I enjoyed everything.”

Galvanizing the Youths as Leaders in STEM

The youths were asked how much they agreed or disagreed with the following statement, “*I feel more interested in STEM education after my participation this weekend.*” Their responses were overwhelmingly positive: 50% said they strongly agreed with the statement, and 50% said they agreed with the statement. When asked to explain why they responded this way, the youths offered the following explanations:

“I enjoyed the past 3 days I had with the Youth Commission members and staff. It helped me interact with new people and learn new concept I hadn't really intended to learn, yet had fun learning.”

“I learned so much in two days and met amazing people that gave great insight into how to go about what we are trying to accomplish. I also bonded with people that I would have never met otherwise.”

“I responded this way because the weekend away with the C-STEM Youth Commission program was one I'm never going to forget because I learned a lot of amazing things about STEM and met other students like me who are interested in making a difference.”

“I think that the overall experience at the retreat was very important and integral to how the program will function in the future because it was a time for those involved in the C-STEM Youth Commission to build bonds that will hopefully last for a very long time, and to learn what the C-STEM Youth Commission is really all about.”

“I think the retreat really showed me what my strengths and weakness are. I also like how we receive the privilege to meet with lobbyist and how to be an advocate. I also like how after a long day of work and meeting we got some R&R.”

“It was a great experience, and I learned a lot during the retreat.”

“Overall, my experience was very well. This is because not only were we able to focus on the importance of our retreat, but we were also able to bond a commission, and get to know one another.”

“The people I have met and the opportunities that we will receive.”

“The people were just overall very enjoyable - I had a lovely time getting to know them all, as well as spending my time with them all. I wouldn't mind repeating this again.”

They also were asked about the extent to which they agreed with the following statement, “*I feel prepared to push for more and better STEM education in my school and community after*

participating this weekend.” Nine of the 10 youths responded, and of those, 30% agreed and 60% strongly agreed with the statement. When asked to explain their response, this is what the youths wrote:

“Before the retreat I did not think that there was much I could do individually or even with the entire group of youth commissioners, but now I know through learning about advocacy and the legislative process during our lectures, I started to see just how much good I do for the STEM education community.”

“Being able to hear a diverse amount of answers from each student.”

“During one of our discussions, Congressman Davis talked about finding success for yourself and not according to anyone else. I realized that my main goal in this entire program is to better communities and to improve in what they are lacking and what they are what they are lacking is STEM education.”

“I think doing the mock congressional meeting. It was an inside look on how these policy could affect my education and or my siblings’ education. Having "advocate" for something was an amazing feeling and like how we got feedback on how to improve certain areas.”

“One moment from the weekend that made me feel more prepared was listening to the congressman.”

“One thing from the weekend that made me want to push for better STEM education would definitely have to be when I did the research for my mock congressional hearing and looked at the low numbers of minorities and women that held careers in STEM fields.”

“The mock congressional meeting. It helped me learn, gave me feedback on presentation skills and I feel that helped me notice some mistakes I had done without noticing in which I can improve on.”

“When we were at the TS Barbara Jordan - Micky Leeland University - the part that made me more prepared was when I was learning all of this political stuff - basically because I feel as if I have a pretty good understanding in every subject of topic - except for politics - and it just warms my heart, that I am going to be expanding my knowledge. I feel as if I'll have more to say on the topic, rather than just being quiet.”

Finally, they were asked how much they agreed with the following statement: *“I feel like I can make a difference in STEM education in my school and community after participating this weekend.”* Of the nine students who responded, four agreed and five strongly agreed. They then were prompted to describe a moment or activity that made them feel this way. These were their responses:

“Being able to practice the mock meetings, made me feel as I was making a difference in my community. We were making an effort to create a bill.”

“I felt when we were hearing from so many different people involved in legislature and government, they were telling us that we have a lot more power than we think.”

“If worse comes to worse with my School's community, I know have an understanding on how I could file for a legislature. I know the role of advocacy - I know the role of

lobbying - I know or think I know everything that could lead my one step further in making the community better - if worse comes to worse.”

“Just being part of the Youth Commission made me feel like I could make a difference for STEM education.”

“One moment from the weekend that made me feel like I can make a difference was hearing the lecture from Ms. Deidra.”

“One thing that made me feel like I could make a difference was when we discussed traveling to Washington, D.C. to discuss the lack of STEM education in minorities and women. By talking to congressional members, we can advocate for a cause that can one day be heard.”

“This weekend they gave us hands on examples of how closely the government actually interacts with us and that it is not as far fetched as it may seem. It put things into more of my perspective and how it will all come together.”

The youths were asked to reflect on a moment they enjoyed from the retreat, and there were many:

“Being able to interact with others and given a mock Congressional meeting was an amazing experience. It was a nervous experience to me, but I learned and in the end it became exciting.”

“I really enjoyed receiving wisdom from all of the successful, experienced, and intelligent people on Saturday, and knowledge is power, so I felt that learning about advocacy and the legislative process will allow me to make a greater difference as an individual in the United States, and an even greater difference with the support of my fellow youth commissioners.”

“I really enjoyed the mock confessional meetings because I was able to see how to properly have a discussion with a congressional member and how I should present myself to them.”

“I wish other students could of have the opportunity to meet with the different elected officials and staff like the Youth Commission because that was one of favorite activity.”

“I would say the whole experience was enjoyable.”

“One of my best moments was when Me, Daelyn, Kindall and Marissa was in the Uber on our way to the boiling Alley and I had the nerve to ask the man, "Do you have an Aux cord?" And he replied back yes. Needless to say, when I plugged in my phone, we were jamming. On the way there we were just letting loose having fun. We were all singing at the top of our lungs saying, " I put my hands up to playing my song you know it's gonna be okay, yeeaaaa there's a party in the U.S.A." Needless to say, there was a party in that Uber.”

“The moment I enjoyed was the Texas Representative Ron Reynolds. I would want other students to experience this.”

“The pairing of partners, and being able to present a case in front of others. It helped with my communication and presentation skills.”

“The Youth Commission Team Building/Ice Breaker/Social Activity was very exciting. This allowed the new members to met and greet, and get to know one another.”

“There were many memorable moments but the most prominent was when we met the state representative, Ron Reynolds. It was amazing to be in the same room as someone that I have such respect for.”

Feedback for Future Retreats

When asked how the retreat might be improved in the future, the youths overall reiterated their satisfaction with the experience and noted that it should be repeated for other youths in the future:

“Honestly, everything was amazing. I was really impressed as to how well it was put together and how the staff was so sweet.”

“I suggest the retreat include an ice breaker a bit earlier when all students arrive.”

I think that the retreat was well planned, and that it did a good job of getting the C-STEM Youth Commissioners together. We had a lot of engaging speakers, and fun activities. The only suggestion I would have is to possibly have more allotted time for the mock Congressional meetings.”

“Keep up the good job.”

“Just to give us a bit more time to get our work prepared. Also, next time we go to Grace’s, make sure they understand we are booked properly. Oh, and hotel Wi-Fi.”

Nine out of the 10 students responded that they would likely (2) or very likely (7) recommend the C-STEM Youth Commission retreat to other youths in the future.

Most of the youths also felt satisfied with how responsive C-STEM staff was to their questions and concerns: Seven were very satisfied and two were somewhat satisfied.

All of the students who rated their accommodations (90%) were very satisfied with the hotel.

Of the 10 youths who participated in the C-STEM Youth Commissioners, all of them were very satisfied with their experience, and all agreed that C-STEM should have a Youth Commission again in the future.

Gratitude to the State Farm Youth Advisory Board

Finally, the youths passed along their gratitude to the State Farm Youth Advisory Board for its support of their participation:

“I am so grateful for your generous donation for this program. It is helping many minorities in the pursuit of a STEM field.”

“I have been quite involved in STEM education and have been given amazing opportunities to participate in STEM, but I don’t think it is fair that I have been given such great opportunities while other kids just like me have not. This is why I am so thankful to our State Farm Insurance sponsor for providing myself and my fellow Youth Commissioners the means to truly make a positive change in STEM education.”

“I thank the Youth Commission sponsor State Farm Insurance for giving me a unique opportunity to better myself and get to learn new knowledge.”

“I would like to share the biggest amount of gratitude to the youth commission sponsor, State Farm. You are changing my life and many others’ in so many ways. You are giving us, the commissioners, the chance to make a difference in ways that we otherwise could not do. There aren’t enough words to express my complete gratitude.”

“I’m thankful to the sponsor of the Youth Commission, State Farm, to grant us this unique opportunity of being able to learn new knowledge and opening such a great door for us.”

“Thank you for allowing the C-STEM Youth Commission the amazing opportunity to make a difference in the lives of minorities and women in our schools and communities. By advocating for our cause, we can change the way people think about STEM education and encourage everyone to pursue careers in STEM as well.”

“Thank you once again State Farm for your dedication to the C-STEM Youth Commission—everyone’s enjoyment came from your and Dr. Flowers’ dedication to this program. I just want you to know, it paid off. Your hard work significantly paid off—everyone had a blast, and it was all thanks to you two—and Jorge, and Simberly, and Brenda (I didn’t forget about you guys).

“Thank you State Farm Insurance for seeing and believing in the Youth Commission. I am grateful for this opportunity.”

“Thank you, the State Farm team, for providing us with this check.”