

STEM Instruction and Robotics Service Learning



Marisa Teti

College Park Scholars – Science & Global Change Program
Mechanical Engineering
mteti@terpmail.umd.edu
College Park Scholars Academic Showcase, April 30, 2021



Introduction:

For my practicum project, I participated in the CPSS240 course, a Service Learning experience offered by the Science, Technology, and Society Scholars Program. Throughout this course, I learned all about STEM education in the U.S. and across the world, its importance, and its progression. In addition to classwork, I instructed robotics to middle school students at College Park Academy. Each week, my teammates and I planned lessons and taught online via Zoom.

Timeline:

First, my team learned the basic workings of the LEGO Mind-storms EV3 Robot to gain comfort with the device and its system.

Next, we taught middle school students how to build and code this robot. This was especially difficult not being in a face-to-face environment.

Lastly, we challenged the students to program the robot to dance to a song. Students were very creative and seemed to enjoy this assignment. This end-of-the-semester task gave the students a chance to show off what they learned.

Personal and External Impact:

I feel as though I learned as much if not more than the students I taught. I came into the program unknowledgeable of robotics and left the program comfortable with building and coding the robot and also relaying that information to others. I found myself calling home to my parents telling them about an exciting lesson plan from the day or a new fact I learned in class. This was a fun, creative class, contrary to the ordinary school material taught in my other Zoom classes during the semester online. I developed a great relationship with my teammates and the middle school students. I didn't want this program to end and I left with an increased interest in the robotics education and career field.

Discussion:

Due to the COVID-19 pandemic, all course material was taught online including coordinating lesson plans with my teammates. We had to work fast, smart, and diligently in order to efficiently deliver the proper information to our middle school students.

Site Information:

Where: College Park Academy via Zoom

Who: Middle School Students

Supervisors: Timothy Reedy and Bernitta Johnson

Mission: Teach robotics

Goals: Have fun, Learn something new!

Issues Confronting Site:

Our focus was on student access to STEM education. Due to the pandemic, our teaching was all online on Zoom. It was harder to keep their attention through the computer and often times we had to remind them to turn their cameras on so we could see their built robot and help them troubleshoot. We soon learned that adding a fun component to the class increased their enthusiasm. Each class, we would start with an icebreaker or a game outside of the robotics instruction. Each student was provided with a robotics kit sent home but had to provide their own device to connect it.

Future Work:

Before college, I did a lot of volunteer work with young children and also babysitting. This opportunity made me miss that experience and made me realize that one day I would love to become a teacher.



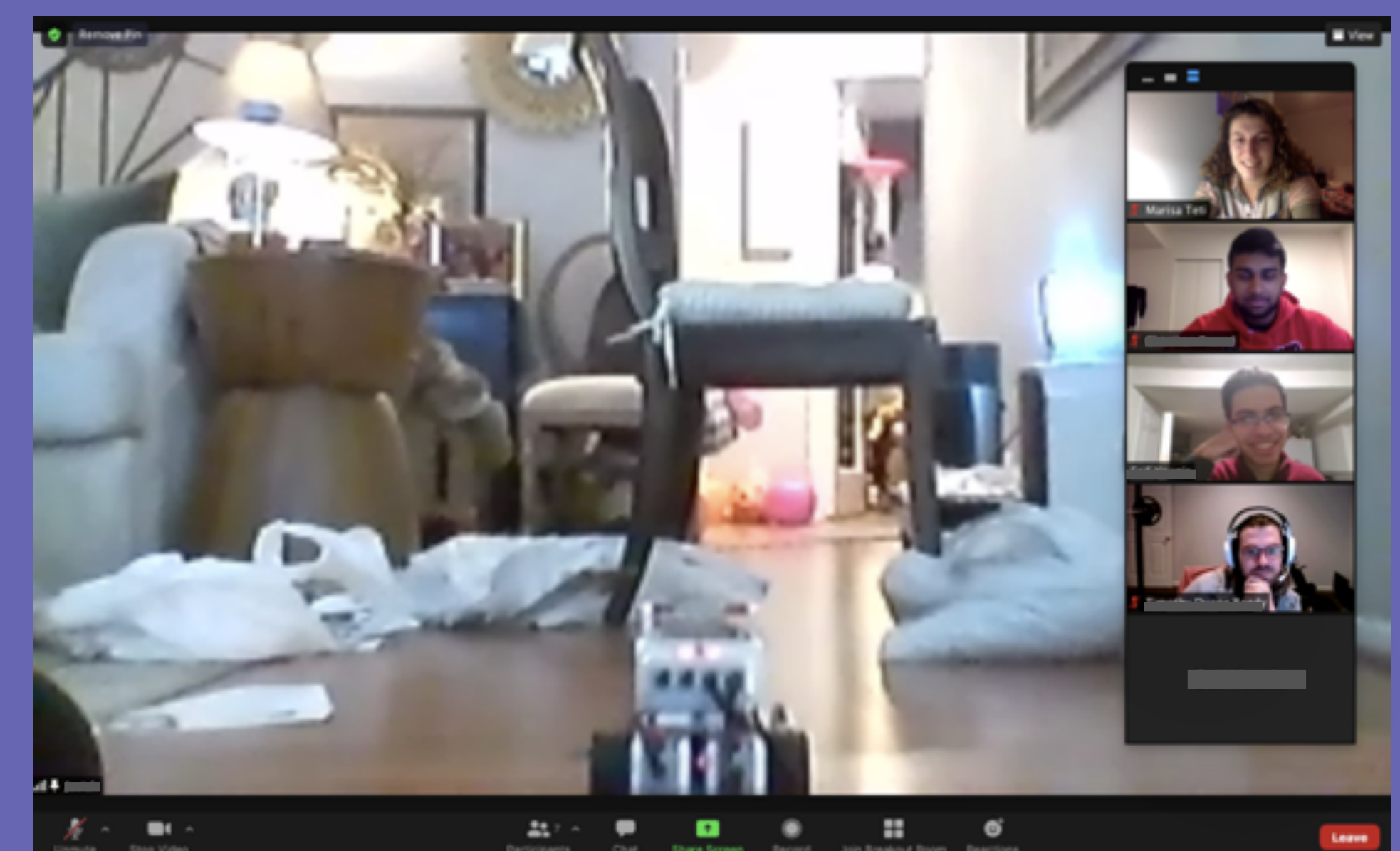
I worked in a team of three CP Scholars students; my teammates were Chinthan and Seif. We became good friends and great teammates.



SCIENCE AND
GLOBAL CHANGE

Acknowledgments:

Thank you Dr. Holtz & Dr. Merck for a wonderful experience in the Science and Global Change Scholars Program. Thank you Timothy Reedy for continuing this practicum opportunity during a pandemic and opening it to students outside of the STS program.



Our last Zoom class when the students showed us a dance they programmed for their robots!

