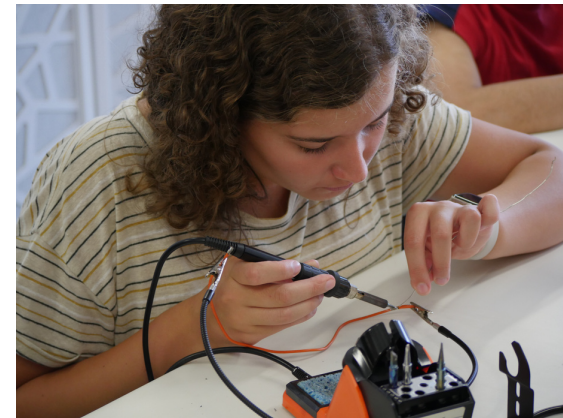
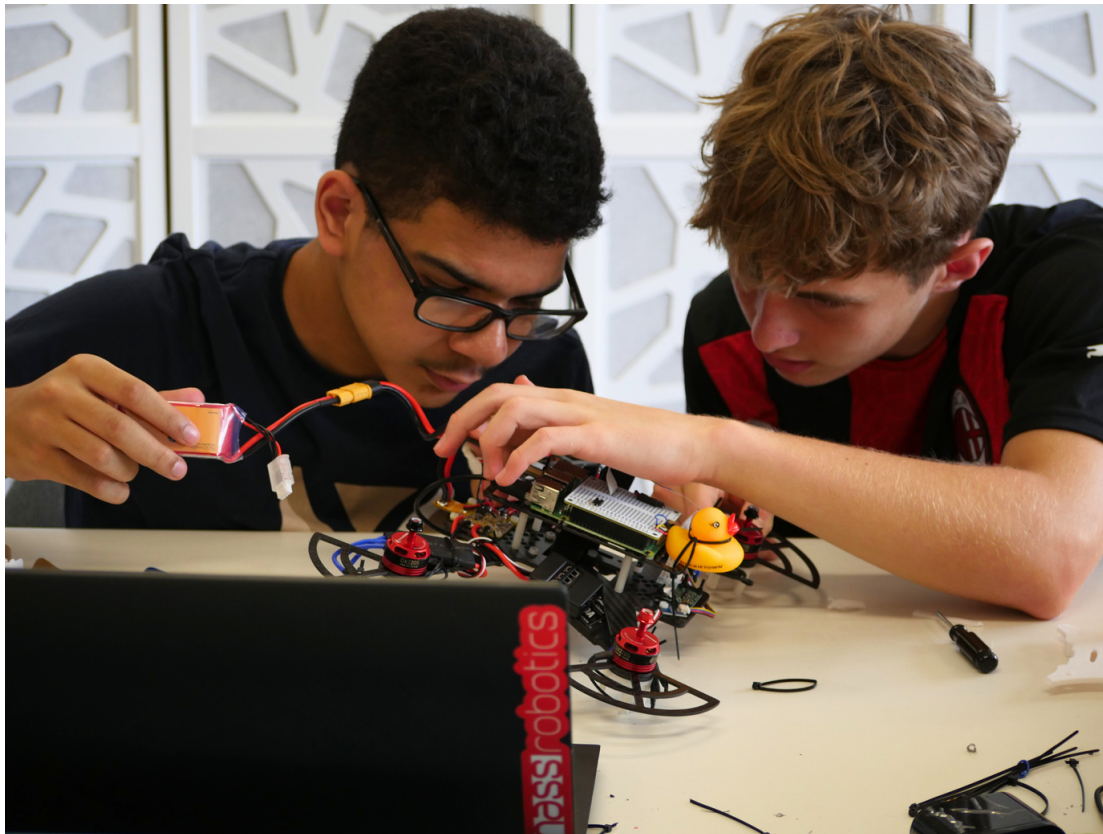




MassRobotics 2023 STEM Impact Report

We support the development of future leaders of **robotics**, from all communities, to build a more diverse and inclusive **STEM** workforce.



STEM

SCIENCE - TECHNOLOGY - ENGINEERING - MATHEMATICS

TABLE OF CONTENTS

	Introduction, Kevin Smith, STEM Program Manager	07
	Annual Robot Block Party	08
	STEM programs	
	• Jumpstart Fellowship	10
	• National Robotics Week	12
	• School Field Trips	13
	• Drone Academy	14
	• BlueTech Robotics Academy	15
	EF Explore America Tours	16
	Government VIP Visits	18
	STEM Champions	19





Kevin Smith

**MassRobotics STEM
Program Manager**

On behalf of MassRobotics' founders, board of directors, staff, founding and annual champions, and all who have contributed and participated in the dynamic experiences cultivated in Boston's Seaport Innovation District, I am pleased to share the 2023 MassRobotics STEM Impact Report. This report is a celebration of all we have accomplished thus far.

Personally, I am amazed at the educational environment nurtured at MassRobotics.

Witnessing students examine and overcome challenges, grow their confidence, and seeing teachers' jaws drop -- tells me that we are doing something special.

With the addition of our STEM Lab, via funding from the Cummings Foundation, MassRobotics has created an enriching environment, core to the transformative experiences taking place. Serving as a place to bring together technical resources, industry equipment, and passions for breaking down barriers, the STEM lab has directly impacted students from coast to coast.

Programs like Jumpstart Fellowship, RoboBoston: Robot Block Party, Drone Academy, BlueTech Robotics Academy, and more could not have been executed without key partnerships, all of which are highlighted in this report. I could not be more proud of how organizations like Amazon Robotics and MITRE support Summer Academies, providing collegiate level exposure for high school students with drones and ROVs.

Moving forward, MassRobotics is looking to build close relationships with select Boston Public School high schools in an effort to transform perspectives of STEM careers. In 2023, MassRobotics hosted 900+ students in our STEM lab and we are focused on raising that number to 1,500+ students in 2024. In addition to reaching more classrooms, MassRobotics will be expanding the Jumpstart Fellowship to a second location thanks to the support of MassTech Collaborative.

The MassRobotics STEM programs are impacting so many students, families, and educators. None of this is possible without teachers willing to go above and beyond, students actively engaging, administration willing to incorporate new experiences, and champions willing to provide mentors and funding to glue everything together. Each piece is vital to creating a rich experience. This STEM Impact Report serves to highlight the impact of these core parties in alignment, and promises we are making to develop the next generation of roboticists.

ANNUAL ROBOT BLOCK PARTY

PREMIER SHOWCASE OF INNOVATION AND TECHNOLOGIES IN ROBOTICS

Free & open to the public!

massrobotics

2017-2022
HIGHLIGHTS

20,000+

**BLOCK PARTY
ATTENDEES**

300+

ROBOTS



SEAPORT x MASSROBOTICS



BOSTON CITY HALL PLAZA >>> SEAPORT, BOSTON

The Annual Robot Block Party has gained momentum and welcomed more than 20,000+ visitors over the past 5 years. It's grown to be known as RoboBoston and is a celebration showcasing universities, startups, companies and student teams with cutting-edge robotics, AI and technology. The celebration also includes a career fair, STEM day, and VIP robotics ecosystem networking reception.

INSPIRING FUTURE INNOVATORS



The first day of RoboBoston is dedicated to school field trips for grades 7-12 and includes 2 hours of interactive activities and demonstrations from autonomous mini vehicles, collaborative arms and robotic hands to robotic dogs and flying bionic butterflies.



STEM SCHOOL FIELD TRIP DAY

JUMPSTART FELLOWSHIP

PROGRAM COMPONENTS

- DESIGN & SIMULATION
- FABRICATION & ELECTRICITY
- CODING
- PROFESSIONAL DEVELOPMENT
- INTERNSHIP

"La Fondation Dassault Systemes proudly sponsors the MassRobotics Jumpstart Program, aligning our mission to spark STEM interest through creative programs.

We've supported this program from day one and are delighted to see the positive impact it has had on dozens of young women, empowering them to pursue technical disciplines in college with confidence."

- Deborah Dean, President at Dassault Systèmes US Foundation



COHORT 1, 2021



COHORT 2, 2022



COHORT 3, 2023





“I found my passion in engineering and coding, my future has never felt so much clearer.”

– Helena (Cohort 1)

“Entering the professional world is not easy, but this program has worked with us to make this path a lot easier.”

– Tairine (Cohort 2)

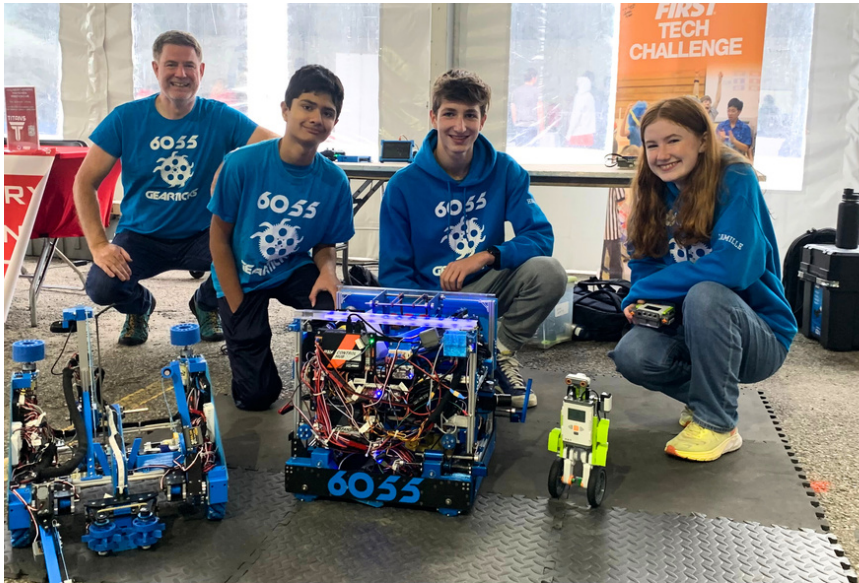


WHAT IS THE MASSROBOTICS JUMPSTART FELLOWSHIP PROGRAM?

This program encourages diverse high school girls to pursue STEM careers by providing them a solid foundation of technical skills through the use of robotics as well as mentors and a professional network that gives them support and confidence. Students then gain real-world experience through a paid summer internship at a robotics or technology company.



NATIONAL ROBOTICS WEEK



In 2023, **MassRobotics** offered Boston Public School students a hands-on Robotics experience during National Robotics Week, hosting workshops incorporating the FIRST Tech Challenge Bots in a mildly competitive environment, as well as introduced students to industry-grade robotics.



WE HOSTED

230+

STUDENTS

13

SCHOOLS

Elliot School K-8 | New Mission High School | Roxbury Prep High School | John D. O'Bryant School of Mathematics and Science | Bates Elementary School | Madison Park Technical Vocational High School | Holmes Innovation School | The English High School | Boston Public Schools | Josiah Quincy Upper School | David A Ellis | Eliot K-8 Innovation School | Bates Elementary School



IN 2023, WE HOSTED

500+

STUDENTS FOR ROBOTICS WORKSHOPS



Throughout the year we host many school field trips for two-to-four hour hands-on workshops using a variety of robotic STEM kits including Neuromaker, LITTLEBITS, Root and Arduino.

SCHOOL FIELD TRIPS

ANNUAL DRONE ACADEMY

The Drone Academy is a collaboration between MassRobotics, Brown University, and Amazon Robotics. The collaboration began in 2019, with our pilot program run at the Dearborn STEM Academy in Boston. We continued to refine the student experience and have provided feedback for the build/test curriculum that has been developed into a user drone kit, commercialized by Duckietown.

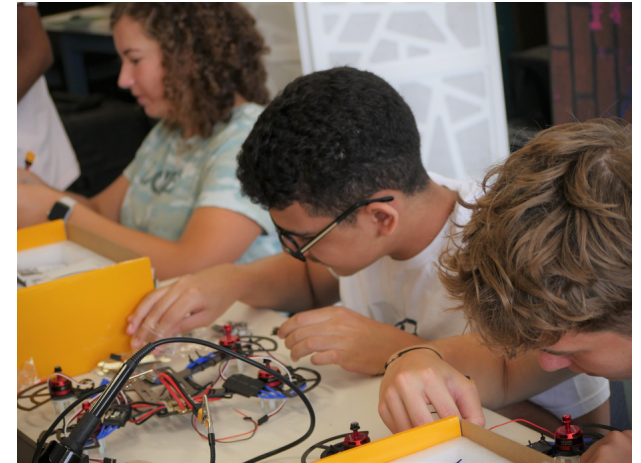
Students attending the Drone Academy learn to:

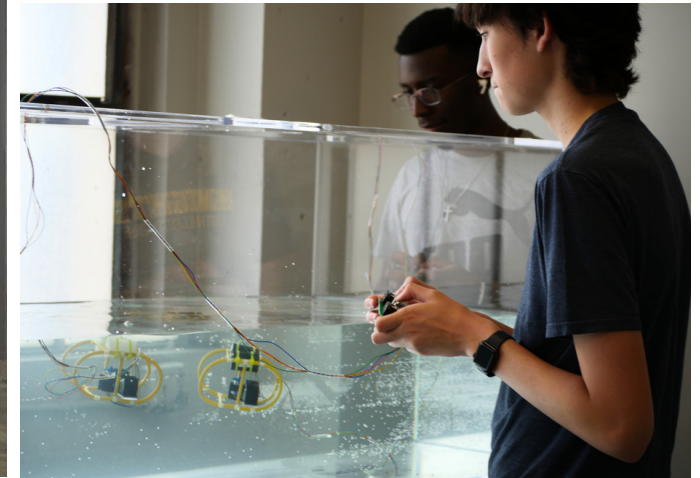
BUILD. PROGRAM. FLY.

In addition to high school academy students, in 2022 we hosted students and faculty from Hampton University and in 2023 we were joined by Howard University staff. These universities will leverage the Duckietown kits and curriculum in both public, community facing programs as well as programs with their university students.

“It was an inspiring experience knowing we built something that is part of the recent cutting-edge technology. It felt good to know I’m part of something big!”

– Mirudulaa (2023)



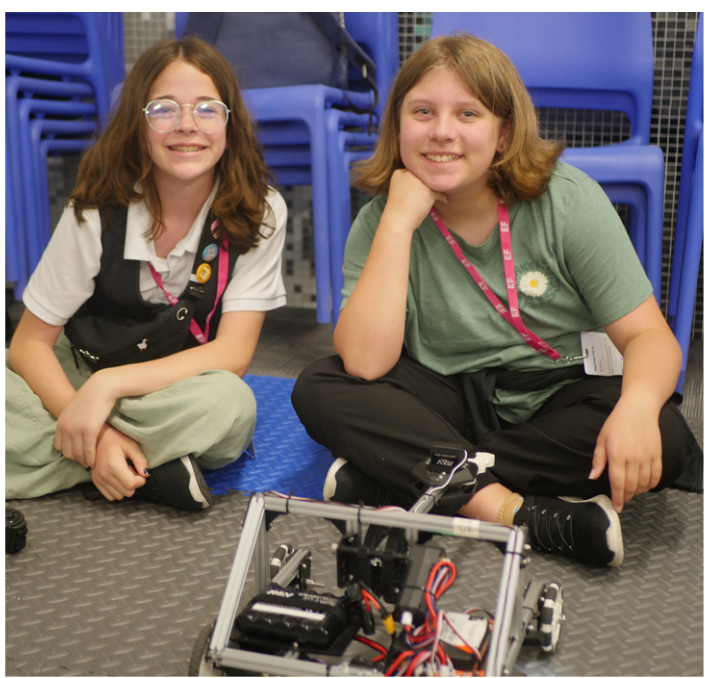


New in 2023, the BlueTech Robotics Academy is a MassRobotics and MITRE collaboration designed to explore Robotics in an Underwater Environment. Students are challenged to integrate various STEM concepts and build a product that is able to thrive at various depths in water. The BlueTech Robotics Academy includes technical curriculum, hands-on underwater vehicle build and on-site MITRE mentors for student-led sessions highlighting tech careers at MITRE.

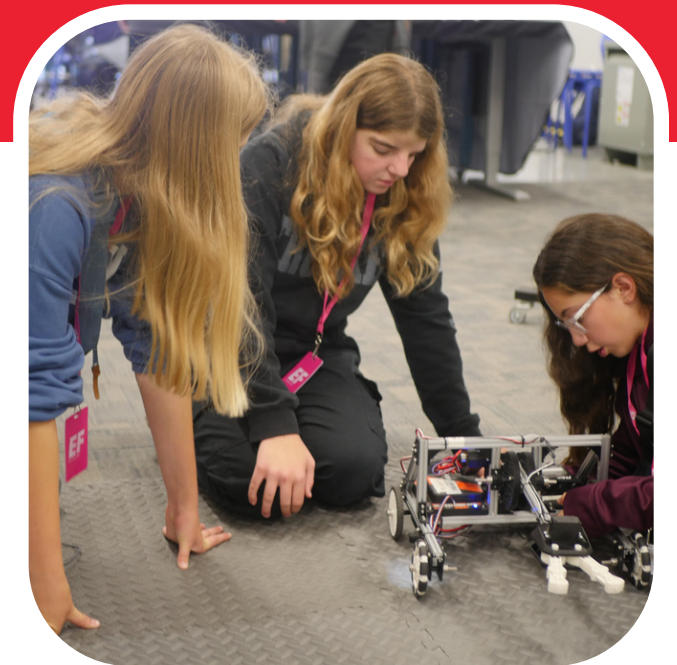
“Challenges from national security, to climate change, to coastal resilience demand that we understand what is happening in our oceans. We’re proud to partner with MassRobotics to host the BlueTech Robotics Academy for high school students to help inspire and build the workforce we’ll need to tackle these challenges.”

– Doug Robbins, Vice President of Engineering and Prototyping at MITRE

EDUCATIONAL VISITS WITH EF TOURS



EF Explore America, one of our STEM Champions, has collaborated with us for the past three years to bring students from around the country to our MassRobotics facility. We deliver hands-on interactive workshops and robotic experiences that ignite interest in STEM, foster critical thinking, and promote real-world applications of concepts.



IN 2023, WE HOSTED



440+

EF STUDENTS



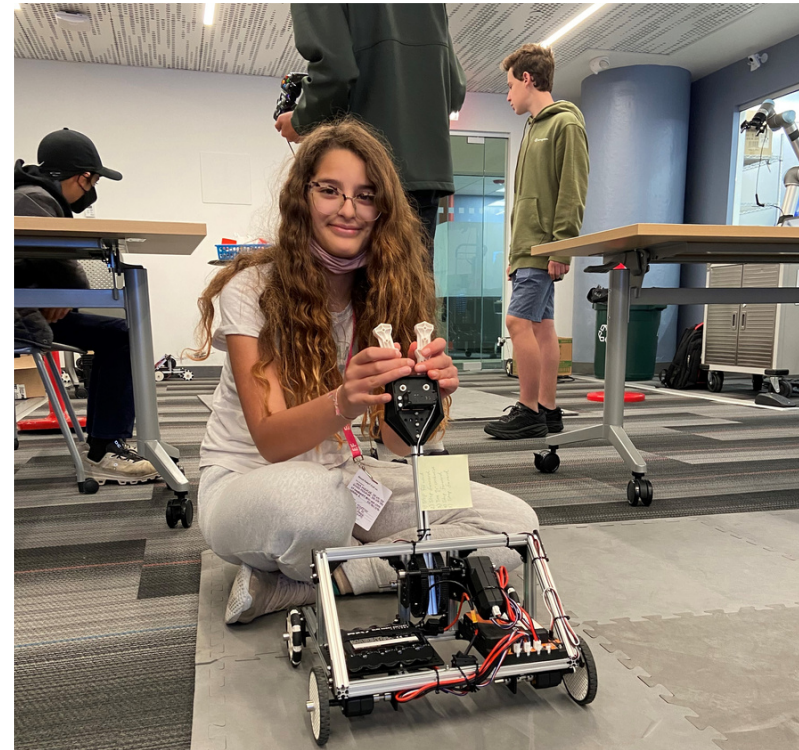
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STUDENT GROUPS



12

STATES



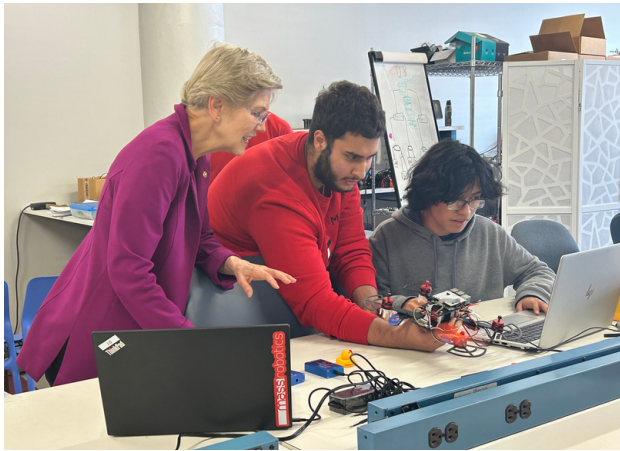
California | Texas | Oregon | Massachusetts | Wisconsin |
Louisiana | Washington State | Wyoming | Kentucky | Vermont |
Virginia | New York

"We are proud of our strong alliance with MassRobotics, enhancing our STEM Discovery portfolio. Bravo to the MassRobotics team, bringing engaging experiences to EF students nationwide!"

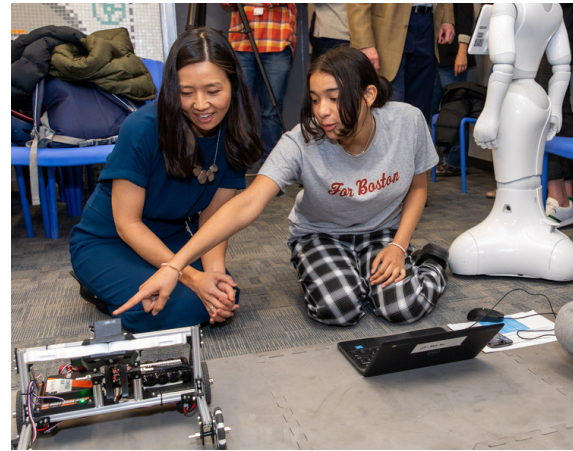
– Darby J. Jones, Senior Director of Operations: Educational Partnerships at EF Education First

GOVERNMENT VIP VISITS

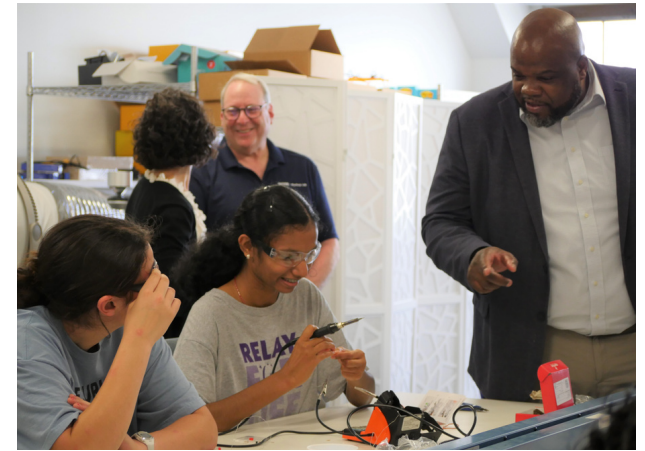
In 2023, we hosted a number of government officials to showcase our vast and growing robotics ecosystem and the impact we have on students.



U.S. Senator Elizabeth Warren (D-MA)



Mayor of Boston, Michelle Wu



MA Secretary of Education,
Dr. Patrick Tutwiler



“MassRobotics is a great asset to the City of Boston. They’re nurturing local talent and attracting innovators from around the world to bring their talent here.”

– Marty Walsh, (NHLPA Executive Director, Prior Boston Mayor, Former United States Secretary of Labor)

MASSROBOTICS STEM CHAMPIONS



STEM CONTRIBUTORS



massrobotics



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