



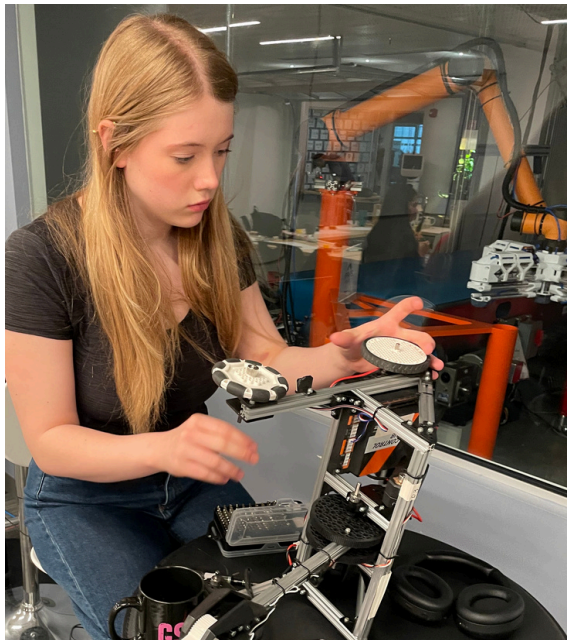
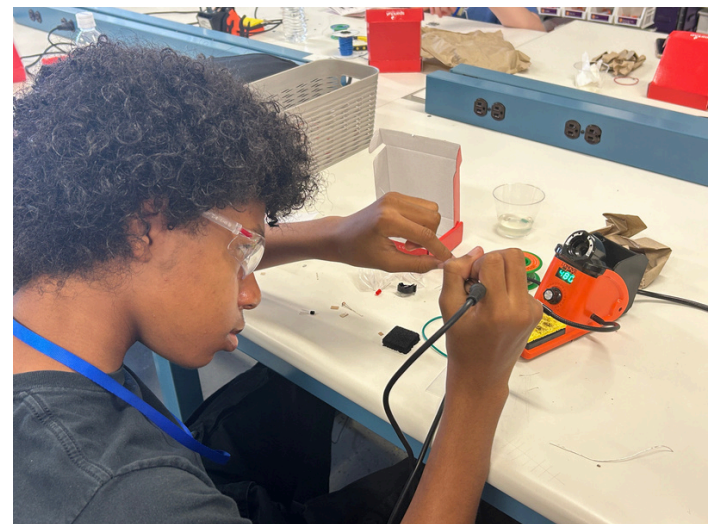
2023-2024

# Mass Robotics STEM Impact Report





MassRobotics supports the development of future technology leaders through the use of robotics, from all communities, to build a more diverse and inclusive **STEM** workforce.









STEM

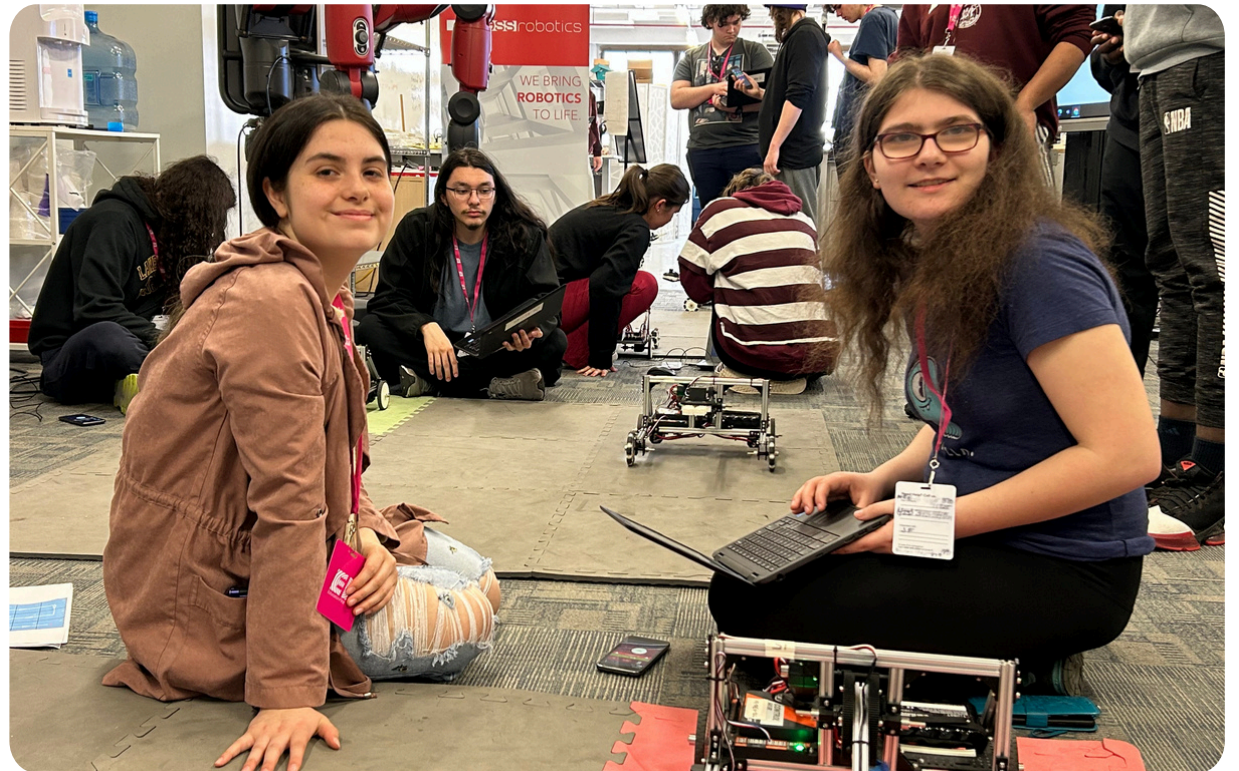
SCIENCE - TECHNOLOGY - ENGINEERING - MATHEMATICS



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## Kevin Smith

MassRobotics STEM  
Program Manager

It has been an honor to serve as the MassRobotics Program Manager for STEM for nearly two years. The impact on students this past year has been tremendous, a testament to our dedicated team, passionate industry partners and dozens of volunteers who generously contribute their expertise, resources, and time. Their commitment ensures that students in our programs receive high-quality, impactful experiences that ignite curiosity and build foundational skills in robotics and technology.

Through our diverse programs, including school field trip visits, summer academies, the Jumpstart Fellowship, and STEM celebration activities, we have engaged with over 2,000 students from Boston Public Schools and other schools across the Commonwealth. We have also welcomed school groups from other states, expanding our reach and influence. These experiences have provided students with hands-on learning opportunities, inspiring them to explore STEM fields further.

The MassRobotics team is incredibly proud of the positive impact we are making on students' lives. As we look ahead, we are filled with optimism and enthusiasm for the future, knowing that together, we are building a brighter, more innovative world for the next generation.

*Kevin*



## Alethea Campbell

MassRobotics Jumpstart  
Program Manager

After three years of hosting the MassRobotics Jumpstart Fellowship Program in Boston, we expanded the program to Lowell with the support of the MassTech Collaborative and UMass' NERVE Center.

The program is designed to encourage and empower diverse high school girls to pursue careers in robotics by providing a solid foundation of technical skills, mentors, and a professional network to gain the confidence and support needed to pursue a career in technology. The program includes a paid summer internship at a company where the student fellows can use their skills in real-world applications and meaningful work.

We see the positive impact on the girls' confidence in their technical abilities and personal skills. Sixty-eight students have completed the program, and most have or plan to pursue engineering, robotics, and computer science in universities.

Entering the program's fifth year, we are excited to continue to work with dedicated educators, volunteers, and mentors to inspire aspiring engineers, roboticists, and computer scientists. Our collective efforts have created a space of belonging where voices grow stronger and more confident. Together with our supporters, we are building a diverse pipeline of talent for the future.

*Alethea* 07

# ANNUAL ROBOT BLOCK PARTY

PREMIER SHOWCASE OF INNOVATION AND TECHNOLOGIES IN ROBOTICS



## 2017-2023 HIGHLIGHTS

**25,000+**

BLOCK PARTY  
ATTENDEES

**350+**

ROBOTS

INSPIRING FUTURE INNOVATORS WHILE EDUCATING  
THE PUBLIC ON THE FUTURE OF ROBOTICS

**BOSTON CITY HALL PLAZA → SEAPORT, BOSTON**

The Annual Robot Block Party has gained momentum and welcomed more than 25,000+ visitors over the past 6 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, robot parade, and VIP robotics ecosystem networking reception.



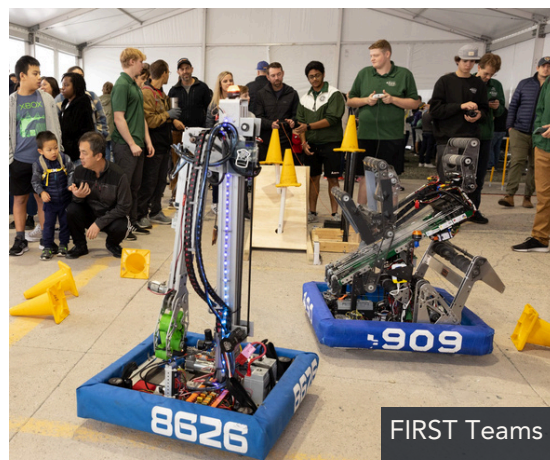
# INSPIRING FUTURE INNOVATORS



2023 SPONSORS:



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



— “  
“My favorite part was when we looked at simple drones and got to fly them. This field trip was a great experience and made me want to know more about computer science.” - Ezeqiel

“I learned that robots can help us with multiple different things and that I might like a career in computer science.” - Gian

“Seeing and interacting with these robots made me think about working with robotics in my job in the future.” - Aysia

New Mission High School | Eliot Innovation School | Donald McKay School | Charlestown High School | Lowell High School

## STEM SCHOOL FIELD TRIP DAY



# JUMPSTART FELLOWSHIP

## WHAT IS THE MASSROBOTICS JUMPSTART FELLOWSHIP PROGRAM?

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



— “ —

*“Jumpstart has let me gain a deeper understanding about the field of engineering and what I want to do in the future.” - Lucy*

*“Being part of Jumpstart made me realize that I’m capable of much more than I had ever thought possible.” - Beatriz*

*“It has been amazing getting to learn from industry professionals, and I feel much more prepared for my future after the program.” - Kendree*

— ” —





## PROGRAM COMPONENTS

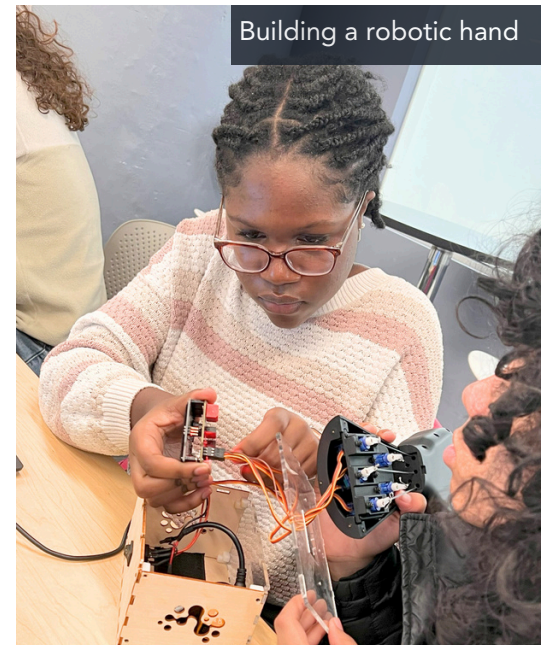
- DESIGN & SIMULATION
- 3D PRINTING & FABRICATION
- CIRCUITS & ELECTRICITY
- CODING
- PROFESSIONAL DEVELOPMENT
- INTERNSHIP



“

*“La Fondation Dassault Systèmes proudly sponsors this program to spark STEM interest through creative initiatives. We have supported this program from the start and are thrilled to see its positive impact, empowering young women to pursue technical disciplines in college with confidence”*  
- Deborah Dean, President at Dassault Systèmes US Foundation

”



# JUMPSTART FELLOWSHIP LOWELL EXPANSION

Our Jumpstart Fellowship Program expansion to Lowell, MA is funded by MasTech Collaborative and hosted at the UMass Lowell NERVE Center. This is our first year expanding the program from Boston to Lowell and we're thrilled that four of our Jumpstart alumni are currently enrolled at UMass Lowell in engineering and computer science.



The first Lowell cohort



“

*“My time with Jumpstart has unveiled so much about the STEM field for me, and it has inspired me to work harder than ever to pave my career in it.” - Misha*

”





Mentor session

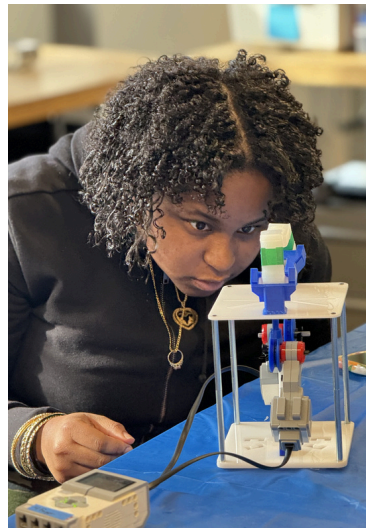
“*This program has taught me so much about what it means to be an engineer.*” - Alison



“*Joining this program has been transformative, allowing me to explore new sides of myself and gain valuable insight for my future endeavors in academia. It was a journey of self-discovery and empowerment that led me to a brighter and more confident path.*” - Yasaman



Circuits class



To date, we have graduated 68 Jumpstart Fellows. Many alumni continue to pursue STEM fields at the following institutions:

- Barnard College
- Boston College
- Boston University
- Bryn Mawr College
- Georgia Tech
- Harvard University
- Johns Hopkins University
- Massachusetts Institute of Technology
- Northeastern University
- Purdue University
- Stanford University
- Suffolk University
- UMass Amherst
- UMass Boston
- UMass Dartmouth
- UMass Lowell
- University of Michigan
- University of Vermont
- Wellesley College
- Wentworth Institute of Technology
- Worcester Polytechnic Institute
- Worcester State University

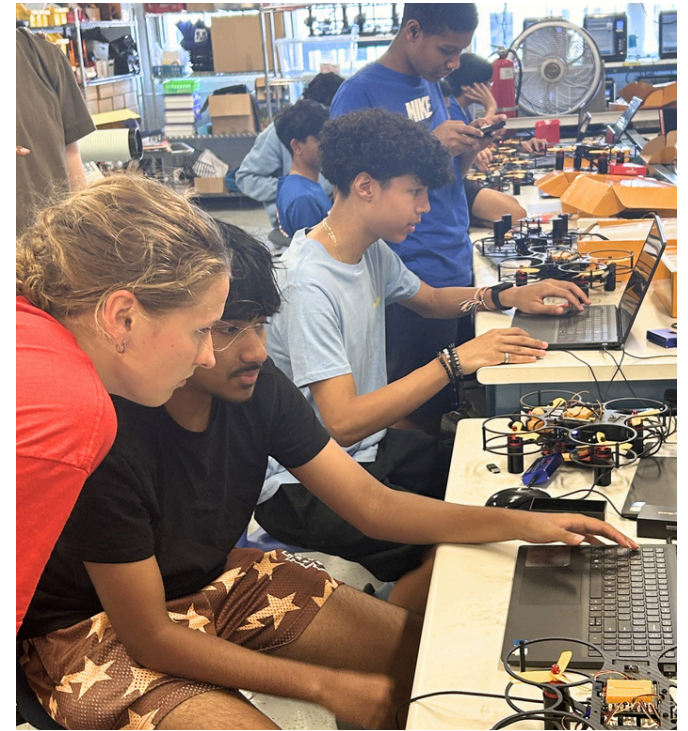


# ANNUAL DRONE ACADEMY

Our Annual Drone Academy (in its 6th year) teaches students various skills related to drones, including the foundations of soldering and electronics, flight controllers, aviation and aerospace, computer networking, regulations and safety procedures, and more, all while gaining expertise from educators and industry professionals.

This academy is sponsored by 

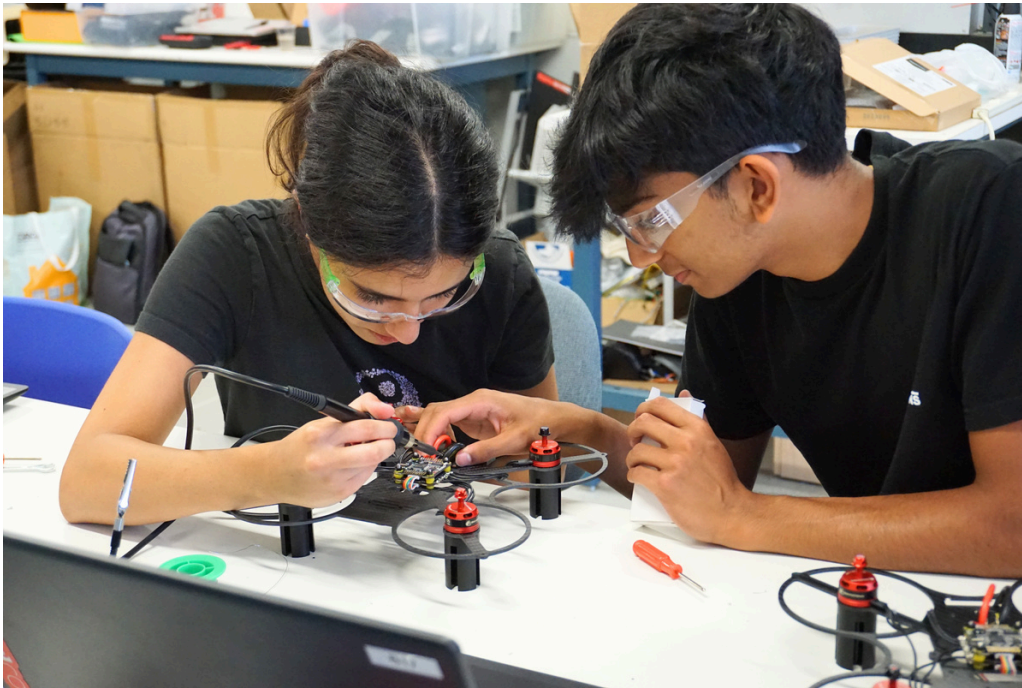
## BUILD. PROGRAM. FLY.



Drone Academy with their final build

“  
*MassRobotics Academy provides “an environment with a diverse group of students with a similar interest to you that will work together and engage in order to complete the assigned task.” - Binty*  
”





— “ —

*“I learned the basics of code on terminal, how to work with others to assemble a drone, and many important career paths and connections through guest speakers to be able to succeed in a STEM career in the future.” - Rishitha*

— ” —

Brown University originally developed these particular drones for “on-campus” educational experiences. Over several years, the drone kits have been refined to provide students with guided exposure to embrace engineers' mindsets and skill sets. With the help of Duckietown, drones can be produced to serve several Drone Academy sites. This year, we worked with the newest iteration of the now commercially available kits.



Coding the drone





# BLUETECH ROBOTICS ACADEMY

# MITRE

We hosted the 2nd annual BlueTech Robotics Academy in collaboration with and sponsored by the MITRE Corporation. The academy is designed for students to explore robotics in an underwater environment.

Students are challenged to integrate various STEM concepts and build a product that thrives at various depths in water. The BlueTech Robotics Academy includes a technical curriculum, hands-on underwater vehicle build, and on-site MITRE mentors for student-led sessions highlighting tech careers at MITRE and in STEM.



Building the Sea Jelly



Students showcase their underwater robots

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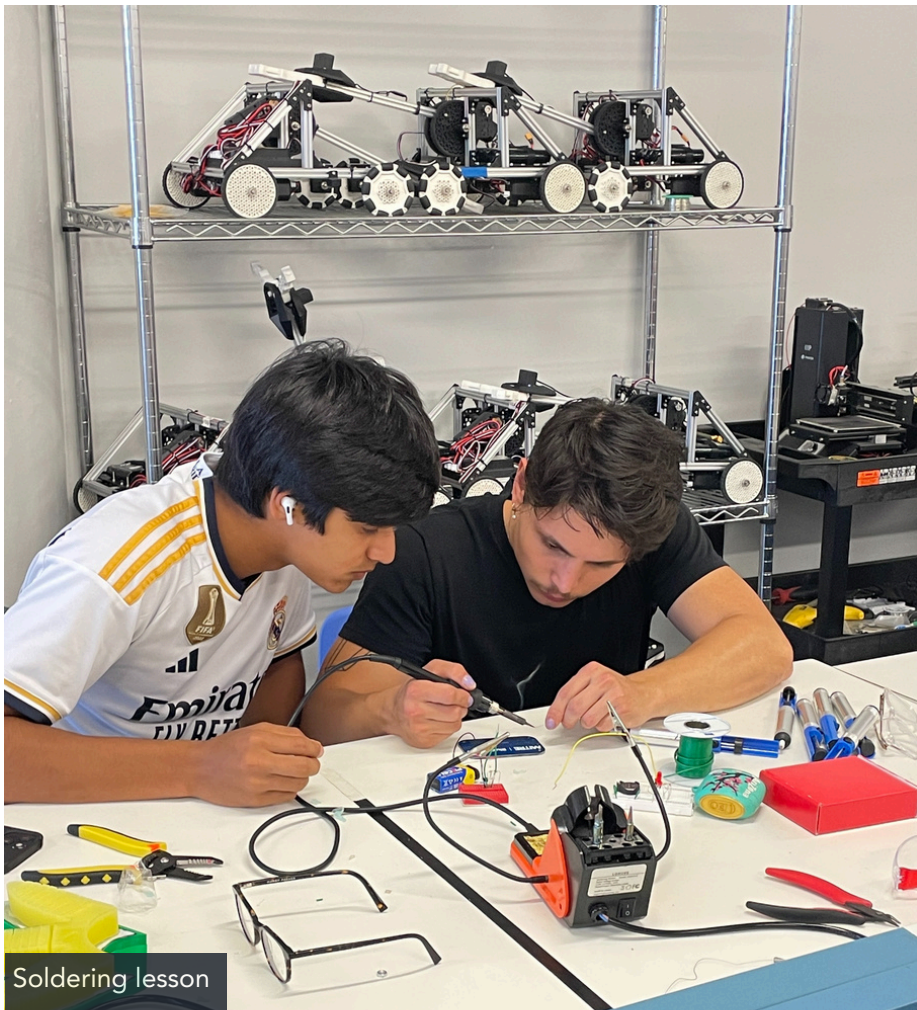
*“My favorite part of this academy was all the experts we talked to. It was a lot of fun, and it was very interesting to hear perspectives of people who work in Blue Tech and I think it definitely made an impact because I might consider a career in it.” - Anika*

”

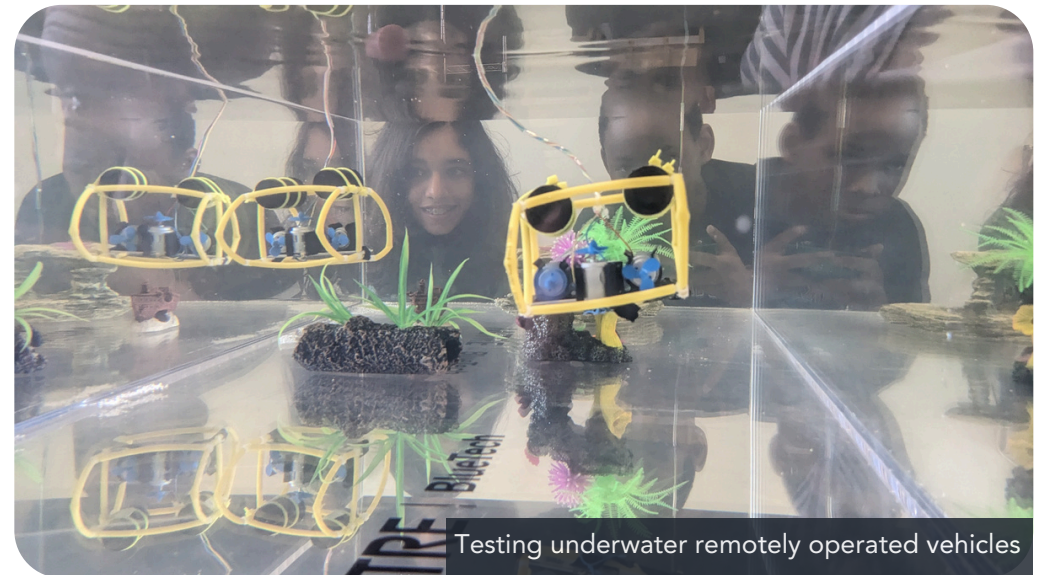


“You get to learn a lot from all of the professionals from different fields like from MITRE and GreenSight and I think that’s a valuable experience that everyone should get, and so I am really grateful for the opportunity to do that.” - Krish

We expanded the program, this year, to incorporate the build of a new aquatic robot, the sea jelly. This was in collaboration with GreenSight and their grant to develop an underwater STEM kit. This curriculum included molding the units, building and attaching the electronics, and testing in the tank.



Soldering lesson



Testing underwater remotely operated vehicles

“The highlight of my week was probably completing the buoyancy challenge, getting the ROV to balance in the middle of the water, and I think it was really fun to get over the challenges and meet new people.” - Rishitha



# EDUCATIONAL VISITS WITH EF TOURS

EF Explore America, one of our STEM Champions, has collaborated with us for the past four 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.

“

*"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*

”



Testing student created code with the robot



# 430+

STUDENTS 



# 16

STUDENT GROUPS



# 14

STATES

In 2024, we hosted students visited from:

California | Florida | Georgia | Illinois | Kentucky | Louisiana | New York | Oregon | Pennsylvania | Texas | Virginia | Washington | Wisconsin | Wyoming





# MASSACHUSETTS **STEM** WEEK | OCTOBER 2023

MassRobotics celebrated MA STEM Week by delivering a STEM experience to over 400 Boston Public Schools students across 19 classes. Partnering with resident startup COR-Platform (Collaborative Online Robotics Platform), students engaged in coding real-world robotic platforms and collaborative problem-solving through online workshop experiences, driving robots to explore new territories using a block-based language that utilized Python code.



— “ —

*"It is great to see students so highly engaged. Look (pointing to a group) these students are usually quiet in class. Look how excited they are! And, they are talking to each other." - STEM Teacher at Forestdale School in Malden*

— ” —

Mendell Elementary School | Forestdale School | New Mission High School | John D. Philbrick Elementary School |  
Massachusetts Public Schools served during Massachusetts STEM Week



# COMPUTER SCIENCE WEEK | DECEMBER 2023

Computer Science Education Week is an annual call to action to inspire K-12 students to learn computer science, advocate for equity, and celebrate the contributions of students, teachers, and partners in the field.

With support from Microsoft, MassRobotics provided a week of activities and workshops including a distinguished panel of guests discussing their career paths and opportunities for those interested in computer science. MassRobotics visited several Boston Public Schools for in-person programming and hands-on engagements where students were exposed to robots and coding.



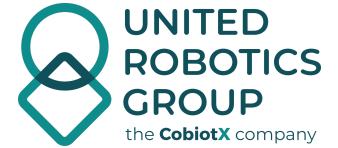
Classroom visit



We were joined by a colleague from our sponsor, United Robotics Group, who brought a Nao robot to entertain and engage students.

# NATIONAL ROBOTICS WEEK | APRIL 2024

MassRobotics enjoyed a week filled with action, including a visit from the Governor, Lt. Governor, and MassTech Collaborative Executive Director, who welcomed students from all over Boston and beyond for immersive robotics workshops — the week culminated in a grand finale session at the Microsoft NERD Center in Cambridge.



WE HOSTED

200+

STUDENTS



Lt. Governor Kim Driscoll & Carolyn Kirk,  
MassTech Executive Director

TechBoston Academy | New Mission High School | Malden High School | English High | Dearborn STEM Academy |  
EF Tours from Baton Rouge LA and Austin, Texas



# SCHOOL FIELD TRIPS | 2023 - 2024

# 500+

## STUDENTS

MassRobotics welcomed more than 500 students to our STEM Lab for a series of exciting workshops. Students enjoyed engaging talks about robots, their sensors, computing capabilities, and future potential. They also had the chance to program mobile robots and tackle hands-on challenges, creating an inspiring and interactive experience.



Testing robotic hand

Many students from local schools including Boston | Dorchester | Roxbury | Cambridge | Somerville | Revere | Brookline | Quincy | Plymouth | Norton | Burlington | Lowell | NY | CT | CA | Australia | Spain





massrobotics

# Empowering Robotics Innovation Worldwide



MassRobotics is the largest independent robotics hub dedicated to accelerating robotics innovation, commercialization and adoption.

Our mission is to help create and scale the next generation of successful robotics and AI technology companies by providing entrepreneurs and startups with the workspace, resources, programming, and connections they need to develop, prototype, test, and commercialize their products and solutions.

While MassRobotics originated and is headquartered in Boston, we reach and support robotics acceleration and adoption globally. We work with startups, academia, industry, and governments both domestically and internationally.



**mass**robotics

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# THANK YOU

TO THE MANY MASSROBOTICS  
STEM VOLUNTEERS &  
CONTRIBUTORS.





# MASSROBOTICS STEM CHAMPIONS



## STEM CONTRIBUTORS



CONNECT | ADVOCATE | ESCALATE | EDUCATE

massrobotics



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