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MassRobotics.org



## **JUMPSTART FELLOWSHIP MISSION**

The MassRobotics Jumpstart Fellowship's mission is to empower diverse Massachusetts high school girls to explore careers in robotics and STEM. The program builds a strong foundation in technical skills while fostering confidence through mentorship, professional networking, and real-world industry exposure. Fellows engage directly with robotics professionals, participate in site visits, and have the opportunity to earn paid summer internships at robotics and tech companies.

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# THE JUMPSTART FELLOWSHIP BEGINNINGS



"We worked closely with industry partners to identify real workforce needs, recruit mentors and subject matter experts, and develop a curriculum that would give high school girls not only technical training but also the confidence, community, and tools to navigate and succeed in STEM and robotics fields. We knew we had to go beyond just teaching skills. We had to equip these young women with strategies and resources to overcome the challenges they were likely to face. That mission continues to guide us today."

- Joyce Sidopoulos
 Co-founder, MassRobotics, Jumpstart Fellowship



The idea for the Jumpstart Fellowship Program came to us from Joel Pedlikin, a founder of one of our startups, who had been working directly with high school students from underserved communities, teaching them technical skills and then hiring them as interns. He saw firsthand the potential these students had with support and exposure. When he shared the idea with MassRobotics, the team immediately recognized the opportunity to help diversify the tech talent pipeline in a meaningful way.

"At GreenSight, one of our founding goals is to address the lack of diversity in engineering. We began to address this by bringing on a bright high school sophomore with an interest in engineering but limited access to opportunities. Over two years, she learned drone piloting and basic electrical engineering—and she's now a full-time Electrical Engineer at GreenSight. This inspired us to replicate the experience and shared the idea with MassRobotics.

I remain actively involved—recruiting companies for internships, supporting Saturday sessions with GreenSight staff, and offering internships ourselves."

-Joel Pedlikin Chief Operating Officer, GreenSight



# EMPOWERING THE NEXT GENERATION IN STEM WORKFORCE

When the Jumpstart Fellowship Program launched five years ago, it began with a bold vision: to break down barriers and create lasting opportunities for underrepresented high school girls in Science, Technology, Engineering, and Math (STEM) fields. Driven by the mission to provide meaningful access to hands-on robotics education, real-world industry experiences, and professional mentorship, the program set out to ignite curiosity, confidence and create career pathways in the next generation of innovators.

What began as a small pilot has grown into a robust ecosystem of support, powered by committed partners, educators, mentors, and industry leaders who believe in the power of inclusion and innovation

This impact report celebrates the Jumpstart Fellowship Program initiatives, its milestones, stories, and outcomes that have defined our first five years.

From classroom curriculum to career mentorship, the program has not only opened doors for female students, it has laid the foundation for a more diverse and dynamic future STEM workforce.



"I found my passion in engineering and coding. My future has never felt so clear." - Helena, Cohort 1

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"The experience helped me realize that I really do like tech and engineering, and think it will be something I pursue as I think about my future (of) what I want to study, and my career."

-Fiorella, Cohort 1

"I never really had a 'tech experience' before the program." -Ruth, Cohort 1







# JUMPSTART FELLOWSHIP PROGRAM KEY ELEMENTS

This program provides a "Jumpstart" for high school girls and prepares them for a career in robotics and the technology sector. The five-month Saturday program curriculum includes three key elements:

## FOUNDATIONAL

- Design and simulation (SOLIDWORKS/CAD)
- Fabrication and 3D printing
- Electronics, soldering, circuits and sensors
- Programming
- Project management skills while prototyping their final projects, and integrating all the technical skills learned











# PROFESSIONAL DEVELOPMENT

- Interviewing a mentor and hosting a discussion
- Exposure to women in tech
- Build robust network in robotics and tech industries (ie. LinkedIn)
- Development of soft skills
- Presenting and resume building







NETWORKING

# INDUSTRY EXPOSURE

- Tour leading robotics and tech companies on tour
- Experience diverse work environments through trainings and internships
- Paid internships with dedicated mentors, providing insights into real-world projects and professional practices



INTERNSHIP



"In this program I was able to discover so much new material like laser cutting and SOLIDWORKS, this has completely motivated me to further explore different STEM fields."

- Ashly, Cohort 5, New Mission High School



"Being in such a welcoming space with dedicated and passionate fellows and mentors, I feel like I've grown so much as a student and as a person."

- Aliana, Cohort 5, Boston Latin School

## **APPROACH**

Skills-based and project-based learning prepares students for careers in robotics and the technology fields. The skills-based learning focuses on essential technical abilities, such as coding, soldering, CAD design, and digital fabrication techniques, including using tools like 3D prints, laser cutter, and CNC machines. The skills curriculum is built based on feedback from internship-hosting companies.

Project-based learning allows students to apply their knowledge and skills through hands-on projects, fostering creativity and problem-solving. This curriculum covers subjects like coding, electronics, fabrication, design, and professional development, equipping students with foundational knowledge and confidence for future STEM careers.





"The program not only helped me envision myself as an engineer for the first time, but also helped me find my spark (pun intended) in electrical engineering. I would not be the student and person I am today without the support of the MassRobotics Jumpstart program. I hope that the program will continue to change the trajectory of countless girls' lives for years to come."

- Catherine, Cohort 4, North Quincy High School



"The MassRobotics Jumpstart program has been completely eye-opening. Since I've had little experience being exposed to STEM, Jumpstart has empowered me not only as a young woman, but also as someone who wishes to pursue engineering."

-Jasmine, Cohort 5, BCLA-McCormack



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## **JUMPSTART 5-YEAR GROWTH**

#### 2021

 The pilot year engaged 8 local students for design + fabrication, soldering, hands-on robotics projects, field trips, and internships hosted by leading companies, including GreenSight, Activ Surgical, and Autonodyne. The program was developed through support from The Boston Foundation, La Fondation Dassault Systèmes, and Mass Tech Collaborative.

#### 2022

 The program expanded to 17 students, integrating Arduino, Python, and project management into the curriculum based on industry feedback. With additional partners and a grant from the Cummings Foundation, Jumpstart deepened its impact.

#### 2023

 10 students from schools across Greater Boston participated. The addition of weekly, student-led Fireside Chats with women at all stages of their technical careers provided valuable insights to the students. The growing alumni network began to take shape.

#### 2024

 Jumpstart expanded beyond Boston, launching a new cohort in Lowell in partnership with UMass Lowell and Mass Tech Collaborative for a total of 34 students in cohort 4.

#### 2025

This milestone year received record-breaking applications and had 29 fellows. Curriculum enhancements included expanded electronics, CAD/CAM, and digital fabrication. Every fellow from Boston and Lowell designed and built a personalized final project, ranging from wearable tech to interactive prototypes, demonstrating the skills, creativity, and confidence gained through the program.

PILOT YEAR IN BOSTON

2021

2023



Introduction to **SOLIDWORKS** 

**2022** BOSTON

ADDED



Machine shop

More coding

Fellows

**BOSTON** 





Fire side chat

Industry visit

2024 EXPANSION TO LOWELL



**BOSTON & LOWELL** 

2025

ADDED

More digital fabrication and electronics



29 Fellows



#### POWERED BY THE COMMUNITY:

# INDUSTRY & VOLUNTEERS MAKE JUMPSTART FELLOWSHIP MORE MEANINGFUL

The success of the Jumpstart Fellowship program is made possible by the support of the community. This unique initiative thrives thanks to the incredible support of our ecosystem and the dedication of industry professionals who volunteer their time to mentor, teach technical modules, and open their doors for tours and internships.

From coding to machining, to fireside chats and everything in between, volunteers bring real-world knowledge directly to the students, helping to shape their experience. We're grateful to everyone, especially our partners, mentors, and industry supporters, who make this program possible. Their commitment is what keeps the Jumpstart engine running.

#### **PROGRAM SPONSORS:**























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"The Jumpstart Fellowship has given me such a special opportunity to explore robotics and engineering....being surrounded by supportive individuals and meeting amazing women in the field has given me a lot more confidence and assurance in my future."

- Quyen, Cohort 4, Boston Latin High School



"MassRobotics has been such a transformative experience for me! It has been amazing getting to learn from industry professionals, and I feel much more prepared for my future after the program. It has also been amazing getting to know so many empowered women in STEM."

- Kendree, Cohort 4, Boston University Academy





"La Fondation Dassault Systèmes is proud to have been a dedicated supporter of the Jumpstart Fellowship program from its pilot phase to today. Over the past five years, our continued support reflects our commitment to sparking interest in STEM through creative, hands-on learning. We're honored to be part of a program that's making a real difference, encouraging young women to pursue technical fields in college with curiosity and confidence."

- Deborah Dean, President at Dassault Systèmes US Foundation



"The Jumpstart Fellowship Program is empowering the next generation of diverse talent in robotics and technology. With state support, the initiative has helped to build a stronger robotics ecosystem in Massachusetts and provided essential opportunities for young women in the field."

- Carolyn Kirk, CEO at MassTech Collaborative

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## INDUSTRY VISITS

Industry visits showcase technologies being developed in real-world work environments offering students an important view of possible career paths.

We thank our industry participants who host fieldtrips, provide lunches and share career challenges and experiences with the fellows.

#### WHERE FELLOWS VISIT

- Accurounds
- Activ Surgical
- Amazon Robotics
- Analog Devices Federa
- Analog Garage
- ASMPT
- Ava Robotics
- Boston Dynamics
- Brooks Automation
- Cirtronics
- Desktop Metal
- GreenSight
- Harmonic Drive
- Lightspeed Manufacturing
- Locus Robotics
- MIT Media Lab
- MIT Museum
- MITRE
- New Balance
- Omron
- Shell Techworks
- Teledyne/FLIR
- WSF









## MENTOR ENGAGEMENTS

Mentors play a critical role in the Jumpstart Fellowship Program by offering technical guidance and time to connect on a personal level. The role of a mentor has evolved to include two main capacities within the current structure: technical mentors, who lead or support skill-based sessions, and featured mentors, who join student-led fireside chats. Mentors come to the Jumpstart program through MassRobotics sponsor companies that host interns, from past mentors, or from individuals eager to support the program's mission.

Mentors help students navigate challenges, build confidence, and expand their professional networks. This makes their impact both practical and personal.

#### WHERE MENTORS ARE FROM

- Amazon Robotics
- Analog Devices
- Arrow Flectronics
- AWS
- Boston Dynamics
- Boston University
- Channel 7
- Converse, Nike Inc.
- Dassault Systèmes
- Dephy
- GreenSight
- Guardian
- HyperVence
- ISEE
- Lightspeed
- Luminous
- MagLev Aero

- MassRobotics
- MassTech Collaborative
- MITRE
- New Balance
- Northeastern University
- Nova Ques
- NSBF Boston
- Revolute Robotics
- SCRATCH
- SparkCharge
- Tarkka Design
- Tatum Robotics
- Texas Instruments
- UMass Lowell
- Vecna Robotics
- WPI

"I am honored to participate as mentor to the Jumpstart program. The young women I meet there are so inspiring, curious and driven to learn. I see my young self in them and it is so gratifying to offer my perspective as a women in technology. I can't wait to see the impact they will have in the world!"

-Natalie Brown, Analog Devices



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## INTERNSHIPS

We work with local industries to secure paid internships for Jumpstart fellows. These internships may involve project work, job shadowing, or technical support and typically last 4 - 12 weeks. Jumpstart fellows are treated as employees and are assigned mentors. The primary goal is to match talent with the best fit based on location, work type, and schedule. These internships are extremely impactful, offering students valuable insight into their first technical and professional careers while helping them navigate and adapt to real-world work environments.





#### **X**UTONODYNE

"Working at Autonodyne was an awesome experience. I got to enhance my 3D modeling skills.... I honestly think this is an experience that will stay with me through out my college application process and my life."

- Bernisha, Cohort 2, Academy of the Pacific Rim

### **NCTIV**

I've learned so much through this internship, and I've gotten to have a glimpse into the biomedical/biotech field(which is an awesome field!). As a result of this internship, I feel that I have not only become better at Solidworks but also with communication and assertiveness. "

-Skylar, Cohort 2







"GreenSight has provided me with a welcoming environment filled with encouraging people who were always ready to help and answer my questions."

- Michelle, Cohort 4, Boston Latin

### wsp

"I'm grateful for this experience because it showed me how broad engineering is, beyond the traditional types of engineering. I learned the importance of collaboration and how all types of engineering are needed to work together to deliver a successful project. Experiencing the culture at WSP really deepened my understanding of what it is like to work in the engineering industry! "

- Emily, Cohort 4, North Quincy High School



#### INTERNSHIP EMPLOYERS





Greensight, co-founder of the Jumpstart program, has hosted students annually for the past 5 years.



#### WHAT JUMPSTART EMPLOYERS HAVE TO SAY

"We are proud to partner with the MassRobotics Jumpstart Fellowship Program. These young women bring fresh perspectives that energize our teams, and our staff develops leadership skills by mentoring them. We encourage our peers, partners, and clients to get involved to help build a more inclusive engineering community."

- Daniel Batt, PE Vice President, Building Structures, WSP

"Hiring high school interns through the MassRobotics Jumpstart Fellowship is a meaningful investment in the future of technology. These students are prepared, curious, and eager to learn, bringing fresh perspectives and energy to our teams. This initiative is more than an internship; it's a commitment to building a more inclusive and innovative robotics workforce."

-Marcio Macedo, Co-Founder, AVA Robotics

"The MassRobotics Jumpstart program is crucial for students, as it provides internship opportunities that offer hands-on experience, mentorship, and exposure to cutting-edge robotics technologies. Together, with MITRE's BlueTech team, we are creating the next generation of engineers solving the ocean's hardest challenges."

- Nick Rotker, Chief BlueTech Strategist, MITRE





We celebrate each cohort at the conclusion of the fellowship program in May. Family members are invited to attend, and the cohort shares the insights and experiences they gained throughout the fellowship.

#### COHORT 1



#### COHORT 2



COHORT 3







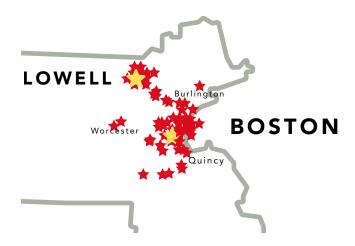
**COHORT 4 Boston & Lowell** 



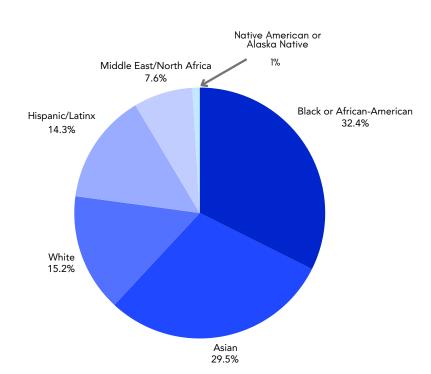
COHORT 5 Boston & Lowell



## **ABOUT JUMPSTART FELLOWS**



The Jumpstart Fellowship Program focuses recruitment efforts on students from underserved communities, with a strong emphasis on engaging Boston Public Schools for the cohorts based at MassRobotics Headquarters in the Boston Seaport. During our two-year expansion to Lowell, we extended our reach to serve students from the greater Lowell area, further broadening our impact across the state.



WHERE FELLOWS	ARE FROM
Boston	
Lowell	9
	9
Cambridge	
Arlington	6
Revere	6
Billerica	
Burlington	
Chelmsford	
Randolph	
Roslindale	
Stoughton	
Everett	
Jamaica Plain	
	18

\*One student from each of the following towns: Belmont | Brockton | Brookline | Chelsea | Charlestown | Concord | Danvers | Dorchester | Hyde Park | Mansfield | Milton | Roxbury | Shrewsbury | Somerville | Wellesley | Winchester | Worcester

#### **DEMOGRAPHICS**

This chart highlights the rich diversity of our student community, showcasing the broad range of ethnic backgrounds represented in the Jumpstart Fellowship Program over the past 5 years.

### THE NEXT CHAPTER:

#### COLLEGE DESTINATIONS OF OUR ALUM

As we celebrate five years of the Jumpstart Fellowship Program, our first cohort of students will be graduating from universities in the coming years—some pursuing advanced degrees, others entering the STEM workforce. Over the past summers, these fellows have secured impressive internships at organizations such as Shell TechWorks, Mass General Hospital, Constellation Energy, Amazon Robotics, and Google. These experiences reflect the ambition, talent, and diverse interests of Jumpstart participants as they prepare for impactful careers and continued academic achievement in STEM fields.

UMass Lowell	
Northeastern University	
Boston University	
Harvard University	
MIT	
Boston College	
Bridgewater State	
Johns Hopkins University	
Suffolk University	
UMass Amherst	
UMass Boston	
WPI	

\*One student attending each of the following: American University | Amherst College | Barnard College | Bryn Mawr | Bunker Hill Community College | Georgia Tech | McGill University | Middlesex Community College / Lowell | Northwestern University | Penn State | Princeton University | Purdue University | Rochester Institute of Technology | Roxbury Community College | Stanford University | Tufts University | UMass Dartmouth | University of Maryland | University of Michigan | University of Vermont | Virginia Tech | Wellesley College | Wentworth Institute of Technology | Worcester State



"Hosting the Jumpstart program expansion here at UMass Lowell has helped us engage the local high school community and showcase the exciting world of robotics on our campus. We're proud that ten former Jumpstart fellows are currently enrolled at UMass Lowell."

- Julie Chen, Chancellor, UMass Lowell

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### WHERE THE FELLOWS ARE NOW

Many of our recent Jumpstart participants are currently in their senior year of high school, actively preparing their applications to colleges and universities. As part of our ongoing support, we frequently provide letters of recommendation and guidance to help them pursue their academic goals.

88% of the Jumpstart fellows who have graduated from high school have gone on to pursue further studies in STEM-related fields.

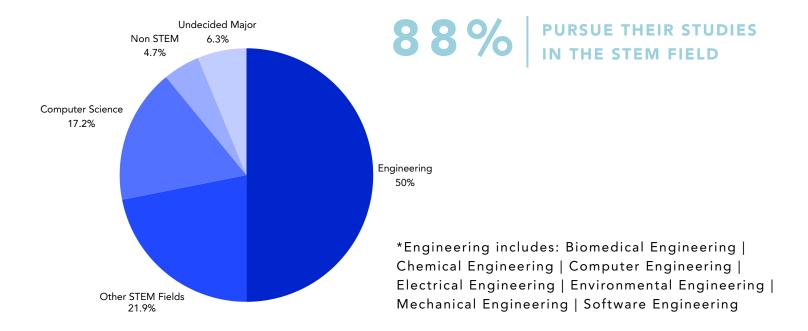
The majority are focusing on engineering disciplines or computer science, reflecting the program's emphasis on problem-solving, innovation, and technical skills. These academic pursuits showcase not only the ambition and talent of our students but also the lasting impact of Jumpstart in equipping them with the confidence and direction to excel in rigorous, future-focused fields.

98 TOTAL FELLOWS

Jumpstart alum continue to share their whereabouts and achievements.
Several have connected with former
Jumpstart alum now studying at various universities, visiting them on campus and receiving private tours that offer a first-hand glimpse into college life.

These connections not only inspire our current students but also highlight the strong, lasting network that the Jumpstart program fosters.

#### JUMPSTART ALUM FIELDS OF STUDY



\*Other STEM Fields include: Architecture | Astrophysics | Chemistry | Geoscience | Health Science | Mathematics and Astronomy | Neuroscience | Physics

# INSPIRATIONAL JUMPSTART ALUM LEADERS

Our inspirational Jumpstart alum leaders embody the excellence and ambition fostered by our program. Ruth and Shreya are examples of Jumpstart Alum who give back to the Fellowship Program. They both continue to inspire future cohorts through their achievements and leadership.

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Rutk

Ruth, a Cohort 1 alum who recently graduated from MIT in Mechanical Engineering and is currently pursuing her master's degree, was a guest speaker at our Women in Robotics Medal Gala.

"Every weekend of my senior spring, I made my way to Seaport, where I learned to solder, use hand tools, and program an Arduino. I was encouraged to try new things, make mistakes, and learn from them. I also met other girls who were just as into STEM as I was—some of whom I still catch up with every year.

One of the best parts of the MassRobotics Fellowship is that it pairs students with technical companies over the summer. I ended up working at a medical device company, ActivSurgical, as a mechanical engineering intern before even starting college—which is practically unheard of! At ActivSurgical, I worked on an imaging module that uses infrared to monitor blood flow in real-time during surgery, eliminating the need for invasive dye injections. I was trusted with responsibilities like mechanical safety tests, data analysis from surgery cases, and R&D work to optimize infrared power for clearer images. Since then, I've taken on exciting research opportunities at MIT—developing bioadhesives, improving prosthetics, and now working with teleoperated robotic systems in the Interactive Robotics Group.

And you know what: all my research mentors have been women - brilliant women.

MassRobotics had a lasting effect on me beyond high school. Not only did my internship at ActivSurgical introduce me to the world of medical devices, but they helped me find another internship this past summer. I worked at GreenSight, a small company that builds autonomous drones. The best part? I got to mentor the 4th cohort of MassRobotics Jumpstart Fellows as they tackled their very first internships. It was a full-circle moment, standing on the other side, surrounded by the next generation of young women in robotics. "



MassRobotics had a lasting effect on me beyond high school.



Shreya, a Cohort 2 alum and Stamps President's Scholar at Georgia Tech majoring in Electrical Engineering, was the guest speaker at our Jumpstart Cohort 5 celebration.

She also serves as the Industry Chair and is an Executive Committee Member at Georgia Tech's chapter of Women in Electrical & Computer Engineering (WECE).

"Through Jumpstart, I gained technical skills, confidence, and, most importantly, I found myself surrounded by an incredibly empowering community. I brought that newfound confidence back to my FIRST Robotics team, where I was able to contribute meaningfully to technical projects. That experience eventually led me to leadership roles—first as Mechanical and Electrical Technical Lead, and later as Co-Captain. In those roles, I worked hard to create welcoming, inclusive spaces—especially for other girls in engineering.

That same spirit of leadership and community carried into other areas of my life as well. I started my high school's Girls in STEM organization and created similar inclusive spaces wherever I could. As you move on from Jumpstart, I encourage you to take everything you've learned—yes, the technical skills and knowledge—but also the confidence, collaboration, and passion for impact. Bring it with you and use it to create change and make a difference in the communities you're part of.

Jumpstart "jumpstarted" my journey.

I could talk for hours about how much I love this program and how deeply it has shaped me. But instead, I'll leave you with my biggest takeaways.

First, through jumpstart I gained confidence—confidence in myself, my ideas, and technical ability. From jumpstart, I gained something more, something sometimes overlooked—an invaluable community... and it is not just the mentors you meet. It's the peers and friendships you have formed through Jumpstart. For example, when I had to stay at Harvard's admitted students weekend, I ended up staying with a close friend from my Jumpstart cohort. But it isn't just a one way street. More recently, one of your cohort members visited Georgia Tech, and I had the pleasure of showing her around campus."



Jumpstart "jumpstarted" my journey.

**mass** robotics

# JUMPSTART FELLOWSHIP ALUM CONTINUE TO SHINE AND CONNECT



This photo captures a proud moment as Jumpstart cohort students, both high school and college fellows, attend the annual Women In Robotics Black Tie Gala honoring female researcher's achievements in the field of robotics. The gathering includes renowned researchers, industry leaders, medal recipients celebrated for their groundbreaking contributions, and Jumpstart alum who represent the next generation of innovators.

Jumpstart fellows are invited as special guests to the Gala and not only witness the recognition of women shaping the field of robotics but also share their own stories with one alum delivering a powerful reflection on how the program fueled her confidence, skills, and aspirations in STEM. This image stands as a testament to Jumpstart's growing impact across multiple cohorts, empowering young women to envision themselves as future leaders in robotics.





Two Jumpstart alum joined Joyce Sidopoulos at the Women's Conference, offering valuable networking opportunities.

Shreya was invited to speak on a panel, and Jaiden was honored with a scholarship from UMass Lowell.

## A LOOK AHEAD

We have reached an exciting milestone in the Jumpstart Fellowship Program: students from our earliest cohorts are now in the final stages of their undergraduate studies, and several will begin their professional careers. Many alum have returned to mentor current fellows during Saturday Sessions and support them through summer internships. Some have even hosted private university tours for younger participants, offering insights into campus life, illustrating the enduring strength of the Jumpstart community.

Our commitment to continued engagement remains strong. Through our Women in Robotics initiatives, we actively support alum and fellows alike by organizing networking events, panel discussions, reunion lunches, and fireside chats. These efforts help sustain the connections and mentorship that define the Jumpstart experience.

As we celebrate five years of the Jumpstart Fellowship Program, we are proud of the thriving community we've built, one that continues to empower and uplift young women as they pursue careers in technology. With each passing year, we see more confident, capable, and inspired Fellows stepping into their futures, supported by a network of mentors, peers, and alum. Jumpstart is five years strong, and we remain deeply committed to growing this movement, building the next generation of bold, innovative women in tech. We can't wait to see what the next five years will bring.

## MassRobotics Jumpstart Team Contributors



Joyce Sidopoulos Chief of Operations & Co-Founder



Kevin Smith STEM Educator



Alethea Campbell Jumpstart Program Manager



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Joel Pedlikin Chief Operating Officer at GreenSight

## Special thanks to:



Lila Bernhardt



Roman Lilligren



Rachael Naoum



Betsy Jasper



Rich Breault



Michelle Stanfield

