

FIRST Impact Award - Team 5454

2025 - Team 5454
Team Number
5454
Team Nickname
Obsidian
Team Location
Bentonville, AR - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in <i>FIRST</i> programs.
95% of our graduates attend college, 100% enter STEM careers, and 3 return as FIRST mentors. Students develop leadership, technical, and problem-solving skills, securing internships and scholarships. Our structured mentorship ensures sustainability, creating a lasting pipeline of STEM professionals.
Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.
Based in Bentonville, AR, we serve students across Benton and Washington Counties (AR), McDonald County (MO), and Delaware County (OK). Bentonville is a corporate hub, but nearby rural areas lack STEM programs, with McDonald County's college graduation rate at just 8%. We provide free robotics programs, integrating STEM into schools, community centers, and afterschool programs to bridge these gaps.
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> Mission in ways that are effective, scalable, sustainable, and creative.
In the past three years have impacted 18,765 individuals by mentoring 33 FIRST teams (12 FLL Explore, 15 FLL Challenge, 6 FTC), hosting 5 FIRST events, and supplying 12 FRC teams with parts and training. We run robotics camps, school workshops, and outreach programs, ensuring sustained STEM engagement. We track effectiveness through participation growth, retention, and interest surveys.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
We aim to expand STEM access in rural and underserved areas by launching robotics programs in 4 Boys & Girls Clubs and 6 public schools. We increased female participation by 50% in FRC and 300% in FLL by forming girls-only teams and mentorship programs. We advocate for STEM education funding, working with 4-H and local policymakers to create long-term change.
What impact has your team seen from your efforts described in the above question? How does your team measure impact?
Our summer camps recruited 3 new FIRST team members, and robotics interest has increased by 90% in participating schools. Schools that previously lacked STEM education now have structured K-12 robotics curriculum. We measure impact through student retention, program expansion, and community engagement growth, ensuring our efforts produce lasting results.

Please provide specific examples of how your team and team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years. How do you share these best practices with other teams?
We host multi-team strategy workshops, provide technical training on swerve drive and scouting systems, and mentor FLL and FTC teams. We founded the first FLL Explore Festival in our region, giving young students a platform to present projects. Our members volunteer at FIRST events as mentors, referees, and judges, sharing knowledge with newer teams.
Describe your team's initiatives to Assist, Mentor, and/or Start other <i>FIRST</i> teams with emphasis on activities within the past 3 years.
We have started and sustained 33 FIRST teams, including FLL, FTC, and FRC. Our OCTOPUS initiative provides 12 FRC teams with shared resources, parts, and technical support. We conduct after-kickoff training sessions, ensuring teams have the knowledge to compete effectively. Our support system helps new and veteran teams alike navigate challenges.
What other initiatives have you created, grown, sustained, or participated in (<i>FIRST</i> or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?
We reach an average of 7,300 students annually through robot demonstrations, STEM workshops, and hands-on engineering events. Our library-based summer robotics program teaches 65+ students per session, introducing them to programming and mechanical design. We actively support neurodiverse students, ensuring inclusive learning environments in robotics education.
Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.
We partner with the Scott Family Amazeum, Thaden School, and Northwest Arkansas Community College to run FIRST events and robotics camps. Corporate sponsors like Ozark Fluid Power and Arconic provide funding, mentorship, and internship opportunities. We collaborate with 4-H to expand robotics in rural areas, advocating for STEM integration in Arkansas and Missouri school districts.
Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, <i>FIRST</i>, and your communities.
We increased female participation by 50% in FRC and 300% in FLL by forming girls-only teams and hosting female-focused STEM events. We support neurodivergent students, ensuring robotics is accessible to students with ADHD and autism. Our outreach programs specifically target low-income and rural communities, reducing barriers to STEM education.
Explain how you ensure your team and the initiatives you have created will be sustainable.
We sustain growth through structured mentorship, financial planning, and industry partnerships. Our annual SWOT analysis refines sponsorship engagement, and our business plan secures long-term funding. We generate revenue through 3D-printed product sales and ensure knowledge transfer through student-led mentorship programs that train the next generation.
Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.
We are increasing female retention in STEM by expanding mentorship programs, developing all-girls robotics camps, and increasing leadership roles for female members. By partnering with female STEM professionals and universities, we aim to create strong role models and a support network for young women in engineering.

Briefly describe other matters of interest to the <i>FIRST</i> Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique, particularly noteworthy, or had a large impact.	
Our impact extends beyond robotics competitions. By integrating STEM into school curricula, expanding outreach programs, and advocating for funding, we are transforming education accessibility in the region. Our commitment ensures every student—regardless of background—has the opportunity to engage in STEM and FIRST robotics	
Judge Feedback	
	What aspect of our outreach efforts do you believe has the most significant impact, and how can we further improve or expand our initiatives to better serve our community and the FIRST mission? An area the team has an opportunity to improve. Something that really impressed the judges.
Essay	
To 5454 Obsidian, FIRST has always been about more than just building robots. FIRST and its initiatives have always intensely highlighted community and the integration of STEM as a whole, and we strive to spread robotics in everything we do. Through measuring our impact over the years, we learned a valuable lesson: while running multiple initiatives like coding workshops, engineering showcases, and maker fairs reached many people, it wasn't creating the deep change we envisioned. The numbers told us what we needed to know. Parent requests for school robotics programs jumped from 15 to over 150 as we shifted from one-time events to sustained programs. This feedback, combined with our community voicing the need for year-round robotics programs, led us to focus on one main initiative: Forging Ahead First. Our team is diversely built, including members from across 3 states and over 11 schools. Anyone who wants to join is encouraged to work in mechanical, electrical, software, or impact regardless of their skill set. This inclusive approach means every student brings unique perspectives to our mission of expanding sustainable robotics education. The success of Forging Ahead First is best told through stories of real change. Take the Thaden Aviatrices FLL team. At the start of their season, they struggled without consistent mentorship. For two months, they were unsure how to tackle the innovation project and robot challenges. When one of our FRC members stepped in as a mentor, everything changed. The team grew tremendously, scoring over 100 points on the robot field and earning high marks on their project rubrics. They even reached out to field experts for their research, showing initiative that carried them to second place at the local Championship and on to the Arkansas Regional. This mentorship model flows through all our programs. Our FLL teams have grown from 8 Explore and 11 Challenge teams to 12 and 15 respectively. We fund and host 3 FTC teams, creating a crucial bridge between FLL and FRC. Students who might have been intimidated by jumping directly to FRC now have a comfortable next step in their FIRST journey. Our partnership with the Scott Family Amazeum shows how focused effort creates lasting impact. What started as simply using their space for FLL Explore teams on Wednesday nights has evolved into something much bigger. Together, we've developed an introductory LEGO curriculum now taught in four Boys & Girls clubs and 6 public schools. Each week, mentors from our FRC team guide these young students, fostering the same passion for robotics that drew us to FIRST.	

The story continues at Thaden School, where three years of collaboration has transformed from hosting our FLL practices to implementing robotics across their entire curriculum. Our summer camps there have become a gateway to FIRST programs - 25% of campers join FLL teams, excited to continue their robotics journey. One older student who attended camp has become one of our most dedicated FRC rookies, showing how these entry points create lasting engagement.

We're now working with Thaden to integrate robotics into their core science classes across all grade levels by 2026. This expansion came directly from them seeing how FLL transformed their students' technical and speaking abilities. The impact is spreading - another school saw their success and asked us to help implement robotics curriculum for their 3rd-6th graders. After launching two successful FLL teams there, we're now working together to introduce robotics electives for all grades.

Every day, we dedicate our time and energy to our FLL and FTC teams, volunteer at community events, and share our passion for robotics at local markets. We've learned that focused, sustained effort creates deeper impact than spreading ourselves thin. The robots we build and awards we win are temporary, but our community impact - the students discovering STEM careers, the schools transforming their curriculum, the mentors returning to inspire others - that's what will never fade. ;

