

FIRST Impact Award - Team 930

2025 - Team 930
Team Number
930
Team Nickname
Mukwonago BEARs
Team Location
Mukwonago, WI - 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.
We have a 100% high-school graduation rate and 85% of alumni credit FIRST for shaping their educational decisions. Our students graduate with experience in running design reviews, presenting status reports, managing budgets, and programming CNC tool paths. Our alumni give back to FIRST, with 20+ volunteering at events, including key roles such as game announcers, FTAA's, and volunteer coordinators. Twelve alumni are active mentors on FIRST teams, five of which are lead mentors on FRC teams.
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.
We are from Mukwonago, Wisconsin, a rural community with a 2.45% poverty rate. This low percentage gives us the responsibility to reach beyond our borders and impact those less fortunate than us. To do this, we donated 27 backpacks filled with school supplies to the Milwaukee Rescue Mission Cross Trainers Academy, which helps children beneath the poverty line, some even homeless, with their educational journeys. We have also donated an additional 39 backpacks to other local communities.
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.
We annually mentor 4 FLL teams, with over 85 participants in the last 3 years. Teams are mentored by our students, having dedicated 850+ hours to this program. We assist our teams with competition costs and organize them in our high school. We sustain these teams by providing them with all of the materials like laptops, SPIKE Kits, and FLL Tables to help them be competitive. Additionally, we have volunteered at 15 FLL events including our own, filling volunteer roles from timekeepers to emcees.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
Each year before the build season begins, our student leads work together to make 1, 3, and 5-year goals. One such goal is establishing a second FRC team in the Mukwonago area that would act as a JV

robotics team to reach more people in our area. We made progress towards this goal by moving to our own workshop, large enough to support 2 teams. Each year we have our rookie students act as leads while creating KitBot, this pushes our younger students to develop leadership skills early on.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

Since we began setting team goals, we have become more unified in our decisions and priorities by displaying our goals in our shop to act as daily reminders. For example, through judge training, we were able to accomplish our goal of receiving a judged award at the championships. Our goals are clear and measurable, ranging from increasing participants in our summer camps to focusing on diversity in our team. We revisit these goals each year to measure our progress and plan for the future.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

We act as role models by sharing our seasoned knowledge of FIRST with other teams through training materials such as workshops, presenting 47, and facilitating an additional 23 in the past 3 years. We present these at events such as MROC, FIRST Wisconsin's FRC Training Day, and at our official FRC Kickoff event. Some workshops are aimed for rookies, while others cover more advanced topics for veteran teams. All workshops are shared through YouTube, reaching over 3,200 views to date.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

Team 930 assists teams online and in their pits. We have helped 10+ FRC teams with urgent needs at competitions, taking their robots from non-functional to competition-ready. We recognize that it is important to keep these connections after competitions are over so we created BEAR Bytes, a programming discord server with members from 171 FRC teams from 8 different countries. BEAR Bytes allows us to assist teams virtually, expanding our impact across the globe and raising up the teams around us.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* 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?

Team 930 runs robotics Summer Camps for elementary kids, with over 140 participants and 78 mentors dedicating 1511 hours since 2022. In introductory and advanced camps, 930 students mentor kids to develop coding and teamwork skills using LEGO SPIKE Prime kits. These camps allow FLL-aged kids in our community to get involved with STEAM through our short program and act as a pipeline to our FLL teams. One in 4 of our camp participants has gone on to join our FLL teams.

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 have cultivated a relationship with our school, Mukwonago High School, and work closely with our award-winning Association for Career and Technical Education program. Additionally, we have demoed 4 times to our school board, resulting in our partnership to finance a practice space for our team with a full-

sized field with access to industry-standard tools. We open our doors to host other FIRST teams year-round to collaborate on our field; 11 teams have joined us for practice.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

Team 930 promotes DEI through our Society of Women Engineers Chapter, SWEBEARs. Our chapter has run 5 SWE events, including 2 Boy Scouts of America and 3 Girl Scout events, that have impacted 100 scouts, 63 of which were female, from 28 troops. These Scouts have earned 250 badges collectively by building, programming, and presenting their STEAM skills using LEGO SPIKE Kits. We have goals to expand SWEBEARs in the future, such as making it an afterschool program to get more women in STEAM.

Explain how you ensure your team and the initiatives you have created will be sustainable.

To sustain our team we utilize student leadership positions, selected the summer before a new season through an interview process. This creates a transition period of knowledge as the former leads are graduating. We use a similar structure to ensure our outreach events are sustained, encouraging all students, especially rookies, to get involved. This, combined with our extensive outreach trackers of 142 events and detailed event documentation capture the key logistics of each event we run.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

For the past few years, the number of members on our team has stayed steady at around 30 students. We especially struggle with recruiting girls; currently, only 20% of our team are women, which is below our goal of 50%. We started our Society of Women Engineers Chapter, SWEBEARs to recruit more female students in our area to reach this goal. We have also increased our recruitment efforts as a whole by demoing at all levels of our school district to gain exposure for our team and FIRST.

Briefly describe other matters of interest to the *FIRST* 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.

Since 2022, each summer we have run MROC, Mukwonago Robotics Offseason Competition. MROC has hosted 66 FRC teams with 1,800 participants. Additionally, through news stations and online views, MROC has reached 2.6 Million people, spreading the message of FIRST across the world. At MROC, we host a team social that 15 teams have attended, encouraging connections outside of gameplay. We believe that MROC is unique to our team due to the large impact that it provides in a single initiative.

Judge Feedback

- Is there something more that we can do to improve our presentation?
- An area the team has an opportunity to improve.
- Something that really impressed the judges.

Essay

We are Team 930, the Mukwonago BEARs from Mukwonago, WI. We consist of 31 passionate team members who strive to act as role models in FIRST and our community. Our mission is to provide year-round accessible opportunities for STEAM inspiration and growth to everyone across the globe.

MROC: Even though the FRC season is only a few months, we impact the world all year long through our outreach initiatives. Beginning in 2022, we created MROC, the Mukwonago Robotics Offseason Competition to expand our impact into the summer. We host this event at our high school with the goal of raising the competitive floor for teams in Wisconsin. We accomplish this by organizing a competition with a level of play that has been compared to a FIRST Regional. Since its start, MROC has hosted 66 FRC teams with 1,800 attendees. Through online views and news stations, we have impacted 2.6 million people from across Southeastern Wisconsin. New this year, we included an MROC Live desk to showcase other teams' hard work. We interviewed students live on air, allowing them to highlight their team's successes, such as community engagement and technical advancements, to everyone in person and on the stream. Every member of Team 930 plays an active role in planning and executing the event, with some students taking on leadership positions to further develop their real-world skills. Off the field, we foster connections with attending teams through a team social and our annual school supply donation drive. Through this, we have donated 60+ backpacks filled with essential school supplies to 7 local communities. The experience of running MROC has given us the knowledge to better assist in the success of other offseason events in Wisconsin; we provide them with floor protection, game pieces, AV support, and hours of volunteering to improve and expand the reach of these events.

FLL EVENTS: Team 930 has been deeply committed to FIRST LEGO League for over 20 years. We host many types of FLL events, such as our annual FLL kickoff that allows local teams to experience the new game and collaborate on ideas. We run the oldest FLL Regional in Wisconsin, as well as the Mukwonago FLL Sectional, providing a competitive environment for 169 teams over the last three years. Our members have contributed over 1,700 volunteer hours to ensure the success of these events. We have introduced 2,400 individuals to FRC by demoing our robot, with 720 FLL students physically driving it—creating hands-on exposure to the next step in their FIRST journey. In addition to the 6 events we have run in the last three years, we have supported 9 additional FLL events throughout the state.

FLL TEAMS: Each year we mentor 4 FLL teams as a part of the Mukwonago Robotics Program. We recruit for them at our local elementary schools through open houses and SPIKE robot demos. We register and provide these teams with game boards, SPIKE Prime kits, meeting space, and assist with competition fees. Every one of our FLL teams are mentored by 930 students, who teach members everything from problem-solving skills to block coding. Our members have contributed over 850 hours towards mentoring. Additionally, to prepare our teams for competition, we organize a scrimmage for them, where they present their innovation projects and compete in robot matches under the guidance of judges and referees.

LEGO ROBOTICS CAMP: Since 2018, we have run introductory and advanced LEGO Robotics Summer Camps that aim to introduce kids to FLL. In the past three years, we have run 6 camps with 116 students from 13 different Wisconsin school districts. Our members have volunteered 1000+ hours towards these camps, working one-on-one with students with LEGO Spike Kits and FLL tables. In the Introductory Camps, students need no previous knowledge and learn to construct and program simple LEGO robots. In the Advanced Camps, kids dive deeper into topics such as sensors and Python programming. These week-long camps allow kids to discover an interest in FLL without the commitment of a full FLL season.

TEAM ASSISTANCE: We strive to help all FIRST teams succeed, one way we do this is by hosting an official FRC Kickoff event that allows local teams to collaborate at the start of the build season. Over the last three years, 14 teams have attended, including 2 rookie teams. Additionally, we have opened our practice field to 11 FRC teams, allowing them to practice and utilize our shop. This year, we donated over \$3,500 worth of parts, including 16 SPARKs, 13 NEO motors, 10 Falcon 500 motors, and 800 ft of wiring to rookie teams 10264 and 10553. Furthermore, we have assisted 10+ teams at competitions, including those from Türkiye and Taiwan, by teaching them to create auto paths and troubleshooting their wiring. We have even lent parts to these teams to help improve their robots and advance them by supplying them with tools and experience to help them be successful in the future. While assisting teams at competitions, we recognized a need for continued support after the event had ended. We have offered 20+ hours of assistance from our members through virtual calls with other teams helping in every way from explaining programming concepts to demonstrating CAD tools.

BEAR BYTES: To organize our virtual assistance, we launched BEAR Bytes, a team collaboration initiative designed to foster connections online. Founded in 2021, BEAR Bytes began as a Discord server aimed at providing programming help to FRC teams. In just four years, the initiative grew to include members from 171 FRC teams across 8 countries, including Australia, Brazil, Canada, India, Israel, Mexico, Türkiye, and the USA. The server allows anyone to ask or answer programming-related questions, enabling assistance from teams worldwide, no matter the distance between them. In addition to the server, we've hosted live Q&A sessions with Team 930 members, offering real-time answers to participants.

WORKSHOPS: As we experience growth in our own team, we strive to spread our knowledge to others. To do this, we have presented 47 workshops (training presentations), at events such as FIRST Wisconsin's FRC Training Day, MROC, and our FRC Kickoffs over the past three years. To date, our students and mentors have presented to 600+ people in person, on a variety of technical and organizational topics. In addition, we have facilitated an additional 23 workshops at our events that have been presented by other local teams. All of these workshops have been recorded and posted on YouTube, amassing over 3,200 views online.

SOCIETY OF WOMEN ENGINEERS: We expand STEAM through our SWENext chapter SWEBEARs. Historically our female membership has been low, so we started SWEBEARs to address this. In the past three years, we have hosted 5 SWE Scout events where 100 Girl and Boy Scouts have earned over 250 robotics badges. These events introduce elementary school students to STEAM principles, such as block-style programming, through our LEGO SPIKE kits. We demo our FRC robot at these events to introduce the kids to FIRST and recruit for our FLL teams. Additionally, our SWENext chapter has participated in national SWE calls and panels, actively learning how to diversify STEAM and connecting at the FIRST Championship with the National SWE Administration.

COMMUNITY DEMOS: Throughout Southeastern Wisconsin, we have spread FIRST awareness with robot demos to our sponsors, schools, and community. Over the last three years, we have reached over 4,500 people at 30 separate events. One of our longest-running demos is at Mukwonago's National Night Out, where we have directly impacted 833 people. Here, we talk to community members, share our successes, and introduce kids to FIRST by having them feed game pieces into our robot. On top of this, we have visited elementary schools, middle schools, and our high school, sharing FIRST with 2,458 students. We also advocated 4 times for our program to the Mukwonago Area School Board through annual demos. This resulted in a partnership to help finance a practice space for our team that includes a

full-size field, industry-standard tools, and an office space.

COLLABORATIONS: Team 930 owes our success to the 33 commercial and personal sponsors that provide our team with materials and funding. We recruit these sponsors through our annual Sponsor Day, in which every student emails local and national companies. We view our sponsors as partners in all we do, so we actively invite them to all of our events. Additionally, we have spent 70+ hours touring and demoing at our sponsors' facilities, creating personal relationships and spreading FIRST. Similarly, in February of 2025, we participated in FIRST Wisconsin's Advocacy Day. Here, five of our students traveled to our state capital to advocate with two of our state legislators for more funding for the 200+ FIRST teams in Wisconsin. Our goal was to expand the Department of Public Instruction grants to cover fees and supplies for all FIRST teams in our state. By doing this, we collaborated with our government officials to push for STEAM funding for the future of FIRST in Wisconsin.

THE FUTURE OF 930: We hold an annual goal-setting retreat where our student leadership creates 1, 3, and 5-year goals to help guide our team toward success. This goal structure encourages our students to be ambitious while being conscious of near-term milestones, ultimately pushing the boundaries of our team for the future. At the end of the season, we review each goal to measure our successes and track our progress. Additionally, we spend time in the preseason training new members on industry-standard tools such as CNC machines or Java programming to sustain our team and prepare for the future. From involvement in FLL to connection with FRC teams, we are creating the future leaders of tomorrow. ;

