

FIRST Impact Award - Team 1792

2023 - Team 1792
Team Number
1792
Team Nickname
Round Table Robotics
Team Location
Oak Creek, WI - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in <i>FIRST</i> programs as mentors/sponsors.
Round Table Robotics is in its 8th year. In the past 3 years we have grown and expanded despite pandemic restrictions, increasing opportunities for our members to develop into technical and business leaders. Of our past members: Every member has graduated high school 18 attending college 16 pursuing STEM related careers 17 receive a STEM related scholarship 15 have completed internships or apprenticeships in a STEM related field 7 graduates actively mentor for 2 different FRC teams
Describe your community along with how your team addresses its unique opportunities and circumstances.
The dynamic community of Oak Creek is in the southeastern corner of Wisconsin, and has manufacturing, logistics and retail businesses on the I-94 Manufacturing Corridor. Students are able to work and get internships with these companies. However there are still many schools in the state without STEM programs. We went to the WASB conference to advocate for STEM and FIRST in more schools. We also offered \$17,500 in scholarships through our growing STEAM Fair which gets students involved in STEM.
Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?
We advocated at the Wisconsin Association of School Boards Conference (WASB) where we held a booth called STEM Robotics and Business: Building Your Students Toolbox. We reached 421 district administrators/school board members with info on how to start a team in FIRST. We ran and hosted 6 FLL Regionals, including the largest regional in the state in 2021 and 2022, and started 9 FLL Explore teams this year. We ran a workshop on FIRST at an FBLA regional with participants from 21 schools.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
In 2022, every team member mentored an FLL Explore team from start to finish. A total of 57 elementary students were reached. Every team member also volunteered at the 2021 and 2022 FLL regional

tournaments, filling every volunteer role from technical director to emcee. We simultaneously ran the yearly STEAM Fair. We also hosted an FBLA workshop where FBLA students got to see what business looked like in STEM and FIRST.

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

Students in our district progress through FIRST activities from FLL Explore through FRC. Our FRC team members started 9 FLL Explore teams with each member mentoring a team. We also have hosted 6 FLL Challenge and 3 FLL Explore competitions. We assisted 2 other FRC teams in our area transport their robots to Houston in 2023 via our sponsor Aim Transport. We also presented information on how to start FIRST teams at an FBLA Workshop and the 2023 Wisconsin Association of School Boards conference.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

"NC3 Festo Introduction to Mechatronics" is a globally recognized certification that we offer to our team and the community. We trained 42 students and 8 girl scouts on FLL teams. We do robot demos at Lion's Fest, National Night Out, NC3 National leadership summit, WASB conference, and at our sponsors. We host a yearly STEAM Fair that is with our FLL Regional. This facilitates students to learn from each other. FarmBot, our autonomous farming robot, that allows us to practice STEM all year.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

We partner with the following organizations: FBLA - Ran Workshop Wisconsin Association of School Boards - Presented FIRST Scouts BSA - Clinics Girl Scouts of Southeastern Wisconsin - Certifications Oak Creek Police Department - Sanitizer Donation Milwaukee Fire Department - 3D Mask Clips Our sponsors include: Regal Rexnord Zund Maestro Motorworks PPG Rockwell Automation Oak Creek Lions Club AIM Oak Creek-Franklin Joint School District Nucor Jensen Air Products NC3 Oak Creek High School Slack

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

Round Table Robotics is open to any student at Oak Creek High School, we recruit members of any race, ethnicity, religion, and/or gender. These efforts have grown our representation to include African American, Hispanic, Asian, and other ethnicities with a range of religious and cultural backgrounds. Last year we launched our DEI initiative promoting Diversity Equity and Inclusion in our team. We have continued to increase our team diversity which has led to great new ideas on the team.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

Our four-year business plan guides our activities. Upperclassmen captains and underclassmen co-captains promote sustainability. FRC members mentor FLL Explore teams, creating a pathway into high school STEM Club. Our FLL competition, the largest in the state, uses student leaders for planning. Our Diversity, Equity and Inclusion initiative ensures that students continue to grow and develop new ideas. To date, 15 students have completed internships or apprenticeships in a STEM related field.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

We connect with sponsors through Zoom, email and consistent communication. Each week during the build season we publish a video showing the work of the previous week. We have been able to go to our sponsors after the pandemic and demo our robot in order to retain sponsors. We have also shown our robot at events such as our FBLA workshop and the WASB conference allowing us to reach new companies. We have recently completed a team rebrand of our logo to modernize and become more professional.

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

We recognized that one weakness of our team was the low number of members with CAD skills, affecting our team's consistency with design. But this year, our team has the largest number of students using CAD ever on our team. We achieved this by having an alumni mentor offer CAD classes to every member of our team.. Our design abilities and overall robot appearance have drastically improved which will lead to more sponsors and better performance in the game.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

Our goals can be summarized in our Core Values that are recited at the beginning of every meeting: SAFETY IS NUMBER 1! We are ONE team. We seek to have fun over being right. We are respectful. We are always learning. We are helpful. We work hard. We are R.T.R. We strive every day to make our team, our school, and our world a better place. We've made many changes to improve safety on our team, by pit shut down checklist, updated safety binder, and MSDS sheets.

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 or particularly noteworthy.

Round Table Robotics is part of our overarching STEM club that allows students to participate at a level they are comfortable at. Students who cannot make the commitment to compete, still have the opportunity to learn about STEM and get involved within the community. This inspires members of the team to work outside of the meeting to improve the community. Some examples of this are our farm bot, parade bot, and even starting a Girls Who Code chapter at our high school.

Essay

Round Table Robotics (RTR) has been “Gearing up for Tomorrow!” for the past 8 years. Our team has been actively living our motto by expanding STEM throughout the nation. This helps us fulfill our mission to inspire the expansion of STEM everywhere by fostering leaders, maintaining a well-rounded team, and aiming to make our community, and eventually the world, a better place.

OUR TEAM Six years ago, we expanded our FRC team to be one aspect of an overarching STEM Club. This expansion allowed us to increase inclusivity and expand our club to include year-round projects. STEM Club ensures that students at any level of availability and interest have an outlet to innovate, design, learn, and create. We currently have 21 members.

The RTR component of STEM Club is a varsity sport and has a simple structure. The two components of the team, operations and technical, each have a captain that leads multiple members under their wing. With this leadership, there are numerous component design teams, or CDTs, including media, marketing, drive train, and manipulator. Each CDT has an upperclassmen captain and an underclassmen apprentice to ensure sustainability for the future.

BUILDING LEADERS AND PROBLEM SOLVERS RTR aims to build character within the members of our team. We begin each meeting by reciting our core values. Each year-round STEM Club project increases leadership opportunities to provide real-world situations in which students can use these core values. Our projects include building 3 additional robots in the offseason: FarmBot, ParadeBot, and test chassis. We make sure to involve our community by showcasing our ParadeBot in 2 parades and the Oak Creek National Night Out. Our alumni's success indicates we are achieving our goals. Out of the 19 alumni of the past three years, 16 are pursuing STEM related careers, 17 received a STEM related scholarship, and so far, 15 received internships. Some places our alumni have participated in internships are Tesla, Rockwell, Peterbilt, Regal Rexnord, PPG, Yaskawa, Zebra and Zünd.

COLLABORATION RTR thrives through collaboration with our sponsors, programs, other teams, and online resources. Our close and inclusive relationship with our sponsors helps us maintain a stable financial position. We strive for personal connections by providing in-person demonstrations on-site at sponsors' businesses. We continue to include our sponsors through our open-door policy, personal invitations to our events, and weekly update videos during build season. Because of this our sponsors have given more in return. They have invited us to multiple events like the Rockwell Automation Fair and the Regal Rexnord Robot Dinner & Expo. Another significant partnership is with NC3 who offers our team industry recognized certifications through their Meclab.

FIRST FOR EVERYONE There was no FRC team in Oak Creek before 2015, so a group of students split off from a community team to begin RTR at Oak Creek High School. As a result, hundreds of students have had access to STEM learning and activities. Oak Creek also lacked any STEM at the elementary level, and its middle school FLL challenge teams were slowly dwindling. RTR responded by annually mentoring FLL explore teams. Soon we realized a more sustainable solution would be to create a feeder system into FLL Challenge. In 2018, we developed an FLL Explore program in our community. Continuing in 2019 with 11 FLL Explore teams. We were on hiatus for 2020 and 2021 from COVID but we restarted the program in 2022 and mentored 9 FLL Explore Teams. These teams are entirely mentored by our team; 100% of the students on RTR mentor either an FLL Explore or Challenge team.

RUNNING COMPETITIONS We have organized 5 FLL Regionals and 3 FLL Jr Expositions. Our annual FLL Regional has grown to be the largest FLL Challenge event in Wisconsin for 2 years in a row! We

held the FLL Explore expo during the FLL tournament so FLL Explore teams can see what robotics looks like at the FLL Challenge and FRC level.

STEAM FAIR In addition to our FIRST involvement, we started the Oak Creek Franklin Joint School District STEAM Fair in 2019. It is a platform for students of all ages to compete with STEAM-based projects. Our first STEAM fair had 56 students in 15 groups competing. We awarded \$17,500 in scholarships. The pandemic was not going to stop our progress. In 2020 and 2021 our STEAM Fair was virtual and able to engage students via Zoom. This year we brought back the STEAM Fair with a fresh coat of paint. We simultaneously had both the STEAM Fair and our FLL Regional at the same time and venue. Students competing in both were able to interact and learn from each other at the event. This event had 28 participants.

FARMBOT Our FarmBot project broadens our horizons while helping those less fortunate. FarmBot is an autonomous farming robot that plants, waters, and weeds its own produce garden. It has been installed at our local Hunger Task Force and at one of our sponsor locations in our town square. It provides an off-season opportunity for skill development, community STEM awareness, and service to our community.

FBLA REGIONAL LEADERSHIP WORKSHOP We ran the FBLA Regional Leadership Conference at our high school in 2022. This event had 601 members and advisers from across 21 schools. Our team recognizes the importance of a strong business leadership for FIRST Teams and wanted to make sure other schools had a business and marketing team like ours. To foster future collaboration we hosted a workshop, "STEM, Robotics and Business: How to engage within your school network." The goal was to connect FBLA members with their high school robotics team further expanding in roads to FIRST Team. We utilized NFC cards loaded up with information regarding our workshop, their teams, and our social media. Two students from each of the 21 schools were given tickets to attend our workshop, in which many participants left with the hope to grow their FIRST Robotics team. After our workshop, all participants left with information on how to start a STEM club and how to improve their robotics team.

WISCONSIN ASSOCIATION OF SCHOOL BOARDS (WASB) A big new thing this year was our booth at the WASB conference called "STEM Robotics and Business: Building Your Students Toolbox". Through this event we reached 421 district administrators and school board members with information on how to get involved with their local FIRST teams. We also provided information on how to start a FIRST team if they didn't have one. We were one of only 4 schools invited to exhibit and were the only school to highlight STEM education. The goal was to get STEM programs into schools who don't have them.

INDUSTRY RECOGNIZED CERTIFICATIONS During the Pandemic our team was fortunate to have a grant that provided the funding for equipment to offer an industry recognized certification. The NC3 Festo Introduction to Mechatronics offers this opportunity to our students. Our members that achieve this certification have significantly grown their knowledge in Mechanical, Electrical, PLC, Sensor,

MARKETING RTR also utilizes technology to foster communication. Our website was built entirely by our student marketing team, used as a hub for our calendar, blog posts, and information on our activities. To further collaboration with other FIRST teams, we run active Facebook, LinkedIn, YouTube and Instagram channels. We expanded our marketing goal for this year to double our social media presence, while enacting our Marketing Plan. Weekly videos are created during build season and sent out to sponsors, family members, alumni, and team members. These are produced in house and have evolved to include spinning graphics, sponsor logos, and lower thirds. During kickoff last year, we had a video Shout Out

from Kevin Scott, CTO of Microsoft. He highlighted some of the success of our team and wished us good luck! We also undertook a rebranding this past year. The goal was to make us more distinct and connect with our school mascot: the knight. This project was headed by a student on the team who worked in collaboration with other team members and sponsors.

SAFETY Safety is RTR's number 1 core value, and we promote safety uniquely. Our safety captain gives a safety briefing at the beginning of each meeting. This keeps our team up-to-date on safety subjects. To expand our safety initiatives beyond RTR, we've participated in 4 trauma kit assembly nights to help the Fire Department outfit the High School and 2 of our industrial sponsors. We also give out safety information to other teams in the pit that include things such as: nearest hospital, building exits, and emergency protocols. This year, we've created pit shut-down checklists, updated our safety binder, and compiled MSDS sheets. **THE FUTURE** Our motto is "gearing up for tomorrow." We maintain a rolling four-year business plan that supports our team growth and our connections to the community. Our specific plans for next year are to expand our sustainable agriculture movement through FarmBot, continue offering industry recognized certifications to our students and community members, and expand connectivity between FIRST FRC Teams, FBLA Chapters, School Boards, and communities across the country. Round Table Robotics has "geared up" for tomorrow for the last 8 years and looks forward to a bright future. We are composed of students who are laying the foundation of strong involvement in STEM, FIRST, safety, and education. Gear by gear, RTR is promising the future that this world desperately needs.;

