

Chairman's Packet

Team 1792



1792

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Who Are We?



Round Table Robotics, Team 1792, was founded in 2015 as a split-off team. This makes us a **fourth year team**. We took the challenges of our main mentor's retirement and subsequent loss of working space and equipment and turned them into the opportunity to grow and develop a new team, and bring STEM to Oak Creek High School. Our goal was to inspire and prepare the next generation of technology and business leaders. Four years later, and we have done just that, growing from 8 kids who wanted an FRC team out of their high school into a **year-round STEM club with 36 members** and ever growing. To date, 93% of our students have gone to college, and the other 7% joined the military for nuclear engineering. 100% are pursuing STEM related careers.

We spread the FIRST message continuously, reaching thousands of community members. We have devoted over 2000 hours to community outreach during the 2018-2019 season; participating in over 30 outreach events has allowed us to show the potential of students in STEM both within and beyond our community. Our **mentorship of 23 FLL Jr and FLL teams** allows us to grow the thinkers of the future. Furthermore, helping **sponsor over 9 FRC teams** and collaborating with 10 teams in our region via the Wisconsin Coalition we began allows us to work alongside our peers to change the world.

The Round Table Robotics motto is **"gearing up for tomorrow!"** because we consistently try to provide opportunities to grow people, possibilities, and perceptions.

AWARDS LIST

Engineering Inspiration - Milwaukee 2018
Entrepreneurship - North Dakota 2018
Pit Safety - Milwaukee 2018
Runner Up Safety Award - Milwaukee 2018
Star of the day Safety Award - Worlds 2018
Safety - Indy Rage Offseason Event 2018

Peer awards:
Best Booth Design - from 1091
Team Spirit - from 5552
Safety First - from 4786

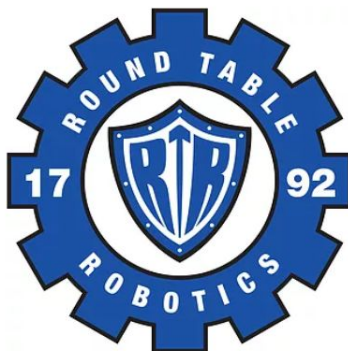
Offseason Events:
Finalist - Indy Rage Offseason Event 2018
Champion - Rockriver Offseason Event 2018
Spirit - Rockford Offseason Event

By The Numbers



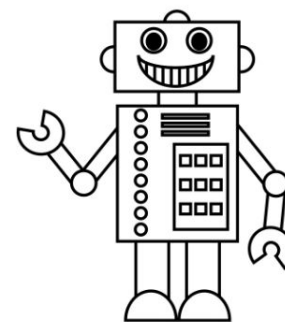
36

STEM club members



23

team leaders



15

offseason projects

What is STEM club?

RTR is under the umbrella of the STEM club at Oak Creek High School. STEM club gives us the opportunity to explore many different STEM resources including **FIRST**® Robotics Competition, **FIRST**® LEGO® League, **FIRST**® LEGO® League Jr, and VEX. STEM club allows year round involvement, and students can participate in as many projects as they wish, making the most out of their involvement.



Over 2000

outreach hours

What offseason projects?

Through STEM Club, students can participate in planning, building, organizing, and competing in many offseason projects. These include FarmBot, STEAM fair, our annual **FLL**® Regional and **FLL Jr**® Expo, mentoring different Levels of **FIRST**, the Wisconsin Coalition, the Super Sponsorship, Vex, and many fun offseason robots! See more on those below.



18

FIRST
LEGO
LEAGUE JR.

8

FIRST
LEGO
LEAGUE

9

FIRST
ROBOTICS
COMPETITION

18 FLL JR teams began and mentored

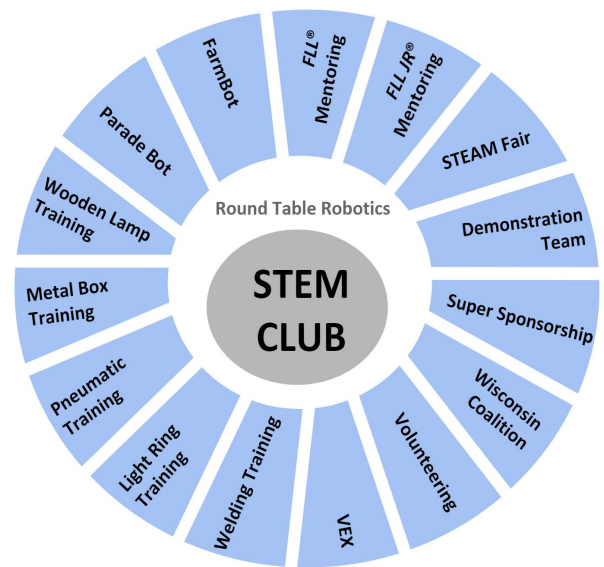
8 FLL teams mentored

9 FRC teams sponsored via our Super Sponsorship

Team Organization

STEM club is an extracurricular club based at Oak Creek High School that encompasses science, technology, engineering, art, and math projects. Any student can join at any time of the year. STEM club allows us to train, create, design, and innovate year round, beyond the scope of build season. Additionally, it provides an outlet to every student interested in STEM, even if they cannot fully commit to build season. The goal of STEM Club is to always help as many kids as possible have a place to go and learn what they are interested in.

First, Round Table Robotics (RTR) falls under STEM Club.



Then, it is structured into two main sections - **operations and manufacturing**; each lead by a captain. The captains possess overall project knowledge, multiple skills, and strong leadership qualities. They work together to ensure neither organization is neglected and that both are working on the same team goals.

Operations focuses on public relations, sponsorship and training members in communication and marketing skills. Operations keeps RTR organized and running smoothly as a business. *Manufacturing* is the core of building the robot, programming and field elements. Manufacturing is responsible for the robot, itself, and training new members on technical skills in woodshop, metals, welding, programming, and design.

Under each team captain are component design teams (CDT's); also each led by a captain. CDT's concentrate on more specific jobs such as manipulator design or volunteer management. CDT captains have displayed leadership qualities and skill knowledge of that component. We have **23 students with leadership positions**, allowing our members to learn the skills to lead a group, all while collaborating with one another.

Other team members can join any CDT they desire. In fact, most team members participate in multiple CDT's on both sides of the structure. This structure works well to support and organize our team.

Our students are also involved in:

- Band
- Theater
- Track
- Dance
- Baseball
- Tennis
- Mock Trial
- Best Buddies
- Boy & Girl Scouts
- Student Council
- Yearbook
- Civil Air Patrol
- FBLA
- NHS
- Tae Kwon Do
- Choir
- Swim
- Environmental Club
- Scuba Club
- German Club
- Model UN
- Ski Club
- Golf
- Soccer



Students

Although Round Table Robotics is a wonderful FRC team with large goals and stable plans to spread FIRST and continue to impact people, possibilities, and perceptions, what makes RTR truly an amazing organization to partake in is the students. Our students are genuinely spectacular, and every one is on the individual and collaborative path to change the world. We are the future, and we made RTR the team it is today.

Rookies

We have 9 freshman and 13 rookies total. We welcome any student with any type of background at any time of the year, which allows RTR to have an array of different students, creating an environment with many different perspectives. This year's rookies are no exception. All rookies compete in Vex, in order to "train" them for build season. The current group of kids thinks outside of the box in ways that are only going to take them big places. We also allow rookies the opportunity to fill leadership positions. In 2019 we have a rookie:

- Chairman's presenter
- Awards Captain
- Electrical co-captain

Leaders

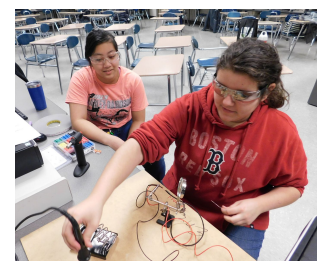
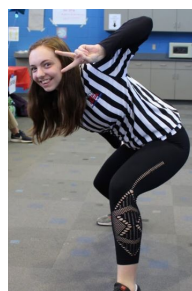
23 students on RTR have leadership positions. Every leadership position is vital for our team to run smoothly. Our leaders plan and organize our meetings and build season schedule.

Team Bonding

Our team works very well together, which not only makes our work more efficient, but also exponentially more fun. We have many team bonding events throughout the year, such as

- An annual all-girls sleepover
- An end of the year bonfire where we burn the previous season's field elements
- An annual Star Wars movie night

We also create fun nicknames for all of our team members, which in turn, creates a fun work environment.



Freshmen

9

Sophomores

11

Juniors

12

Seniors

4

40% Females



"RTR has allowed me to expand my knowledge both through business and engineering. I look forward to my time spent at robotics and all of the challenges we manage to push through."

-Hailey Mendola (10)
Safety Captain



23 Leadership Positions

"Through RTR, I have met many people, been greeted with a feeling of belonging, and have found the positive spirit in Oak Creek High School."

-An Hua (9)
Electrical Co-Captain (Freshman)

"RTR has given me a platform to grow my skills a meet like-minded people. STEM Club's design and marketing projects are stellar and have taught me so much."

-Lucas Brown (11)
Quartermaster

"RTR allows me to continue a hobby that I found in middle school. It is so inspiring that I have continued to pursue this throughout high school and introduced me to many pals."

-Joey Hicks (12)
Woodshop Captain



Mentors

"Mrs. Skrobis knows exactly how to explain business and marketing in a way that makes me want to not only learn, but become an expert at the given subject."

-Mya Mendola (11)
Chief of Operations Officer

"Enzo is very relatable, so we call him Frienzo. With every joke he makes, he increases our love and knowledge for electrical concepts."

- Michaela Snead (11)
Awards Captain and Electrical
Co-captain

"Mrs. Olson is an inspirational woman to every girl in STEM. With her major in Physics and love of gears, she shows what it is truly like to be a strong female innovator."

-Erin Marshall (11)
Project Manager

"Mr. Janquart is constantly offering help in the workshop and has a great sense of humor."

-Brian Gross (10)
Pit Scouting Captain

"I think a role model is a mentor - someone you see on a daily basis, and you learn from them."

- Denzel Washington

RTR has 20 Mentors

Head

Mr. Krist
Mrs. Marshall

Electrical

Mr. Marnocha
Mr. E Marshall

Business & Marketing

Mrs. Skrobis
Mrs. Jones
Ms. Hogan
Mr. Soya

Programming

Mr. Marnocha
Mr. Hicks

Mechanical

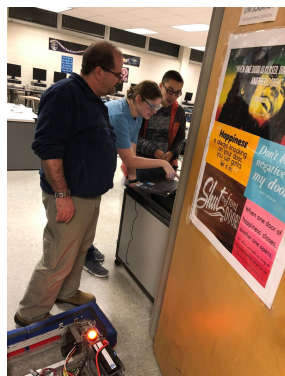
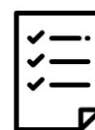
Mr. Schramkowski
Mr. Marshall
Mrs. Olson
Mr. Niemiec
Mr. Matthews
Mr. Shaubel
Mr. Jones

Woodshop

Mr. Janquart
Mr. Mannebach
Mr. Gross

Special Projects

Mr. Soya
Ms. Hogan
Mrs. Janquart



Impacting People



Team 1792



By the Numbers

100% alumni graduated high school



93% alumni attending college



**7% alumni joined
the military**



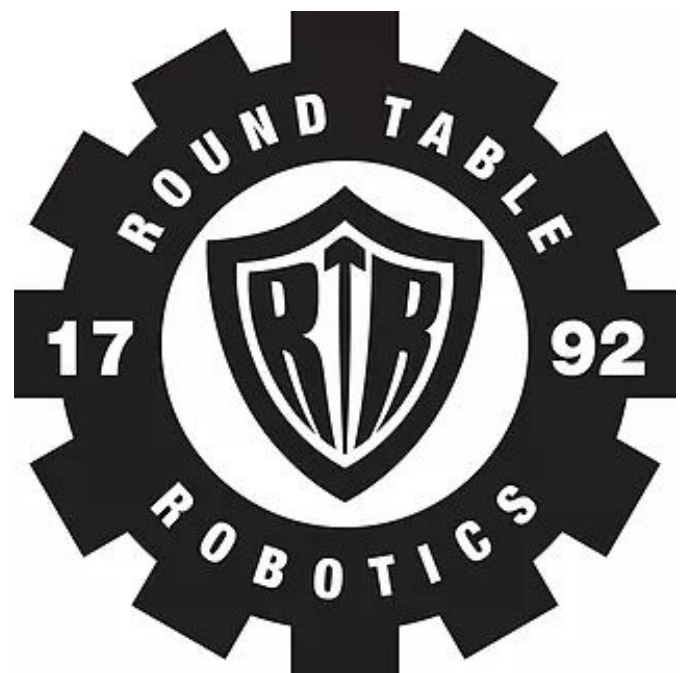
**4 alumni held STEM
internships**



**43% of alumni received
STEM scholarships**

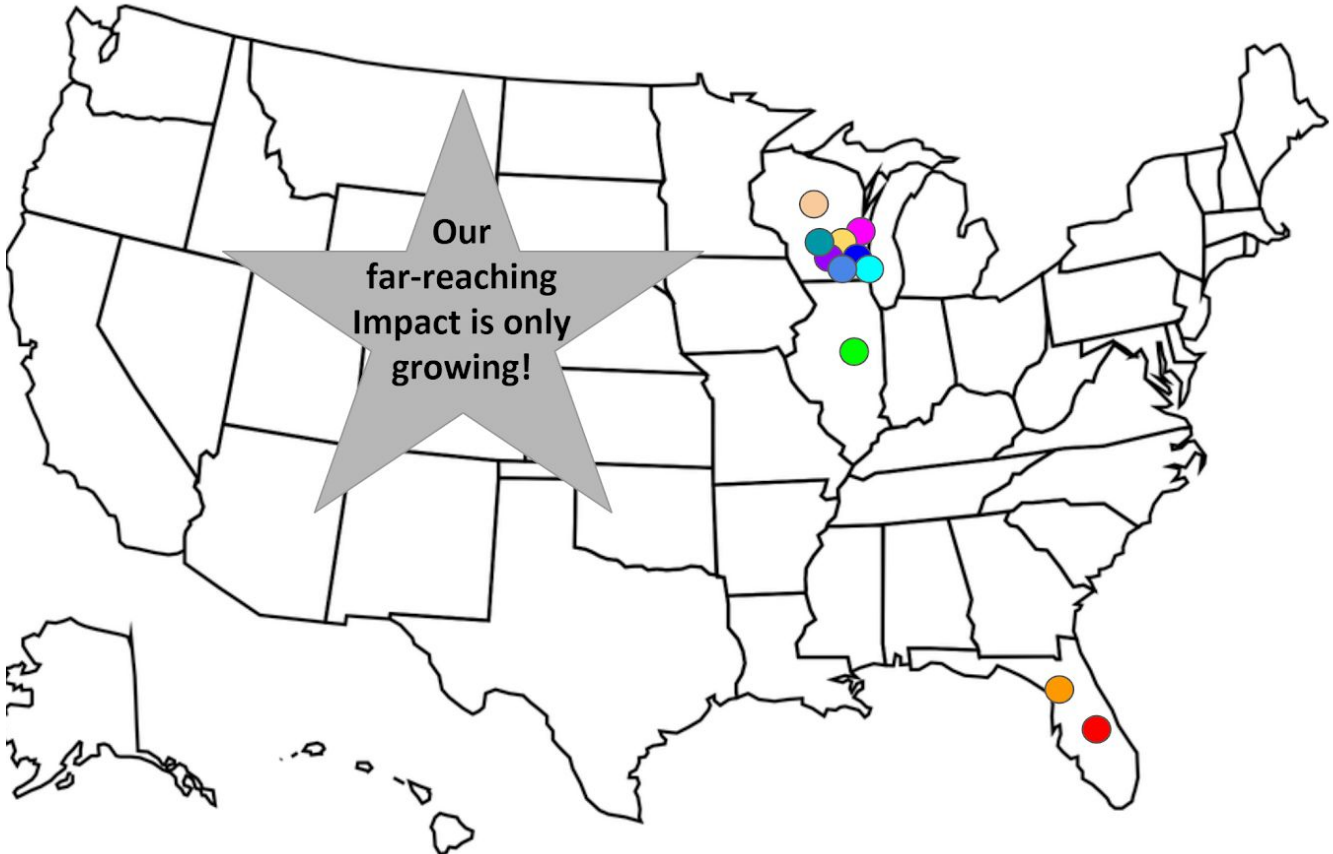


100% alumni pursuing STEM careers



Impacting Futures

Where Did Our Alumni Go?



"RTR allowed me to make connections and network in high school, which allowed me to obtain scholarships for college. RTR entirely shaped my future."

- Collin Ostrowski, class of 2018

"During my time on RTR, I developed my ability to tackle a problem and figure out a solution. Although this skill is very useful in engineering projects, it is also an essential life skill that can be applied to many situations. Because of RTR, I am very adept at thinking of solutions, and figuring out which solution is the best for my current situation."

- Michael Niemiec, class of 2018



Impacting Students

Round Table Robotics strives to encourage as much participation in every aspect of STEM as possible. In order to do so, we have many offseason trainings to teach students skills that will not only help them strive in many STEM Club projects, but also in their future! For example:



MATERIAL OF THE MONTH

RTR conducts material of the month workshops in the offseason to make sure all members, new and old, are up to date on all tools and how to use them. A student and mentor pair up to make a project that highlights the use of a specific tool or machine along with a special material. So far, we **have had over 19 different material studies!** Example materials include fiberglass, aluminum, polycarbonate and acrylic. The student and mentor then lead the rest of the team in the project they created. This educates everyone on all the possible uses of the tools in the shops and shows them just a few of the materials that can help them bring their ideas to light.

METAL BOX

To expand on material of the month, every year, each student has the opportunity to create a metal box out of aluminum. Students learn how to layout plans for the box, including determining appropriate measurements. After creating the plan, students then learn how to shear, bend, punch and rivet the metal to form the actual box. The students have a souvenir to take home that they can use as they wish.

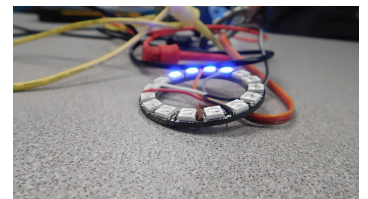


WOODEN LAMP

To learn woodshop machines and basic electrical skills, students create a fully functioning lamp. They follow a plan to cut and shape the wooden pieces using machines in our woodshop. They then wire the lamp so they can actually use it.

LIGHT RING

The light ring project allows students to learn basic wiring, soldering and programming. Students learn both the hardware and programming side of wiring.



WELDING

In preparation for build season we conduct welding classes. This allows any student to learn how to weld and participate in building the robot.

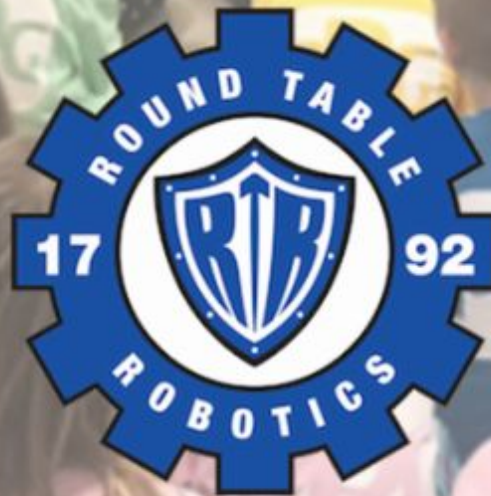


PARADE-BOT

In a build-like season environment, RTR creates a parade robot that we demo in our community Fourth of July and Homecoming parades. Students learn how to design and build a 'fun' robot while simultaneously create a marketing opportunity for our team. Past designs include bubbles, candy dispensers and music players. We even designed our own tee-shirt cannon!

DESTINATION:
**DEEP
SPACE**

Sponsored by
BOEING



Team 1792

Impacting Possibilities

FRC

4th year as an FRC team



Sponsor 9 other FRC teams



In contact with 10 FRC teams
via the Wisconsin Coalition

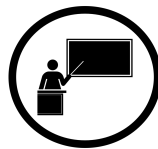


By the Numbers

**100% of
Students
Mentor**

FLL

24 total FLL teams mentored



8 FLL teams mentored this year



3rd annual FLL Regional



FLL Jr.

1st annual FLL Jr. Expo



18 FLL Jr. teams started



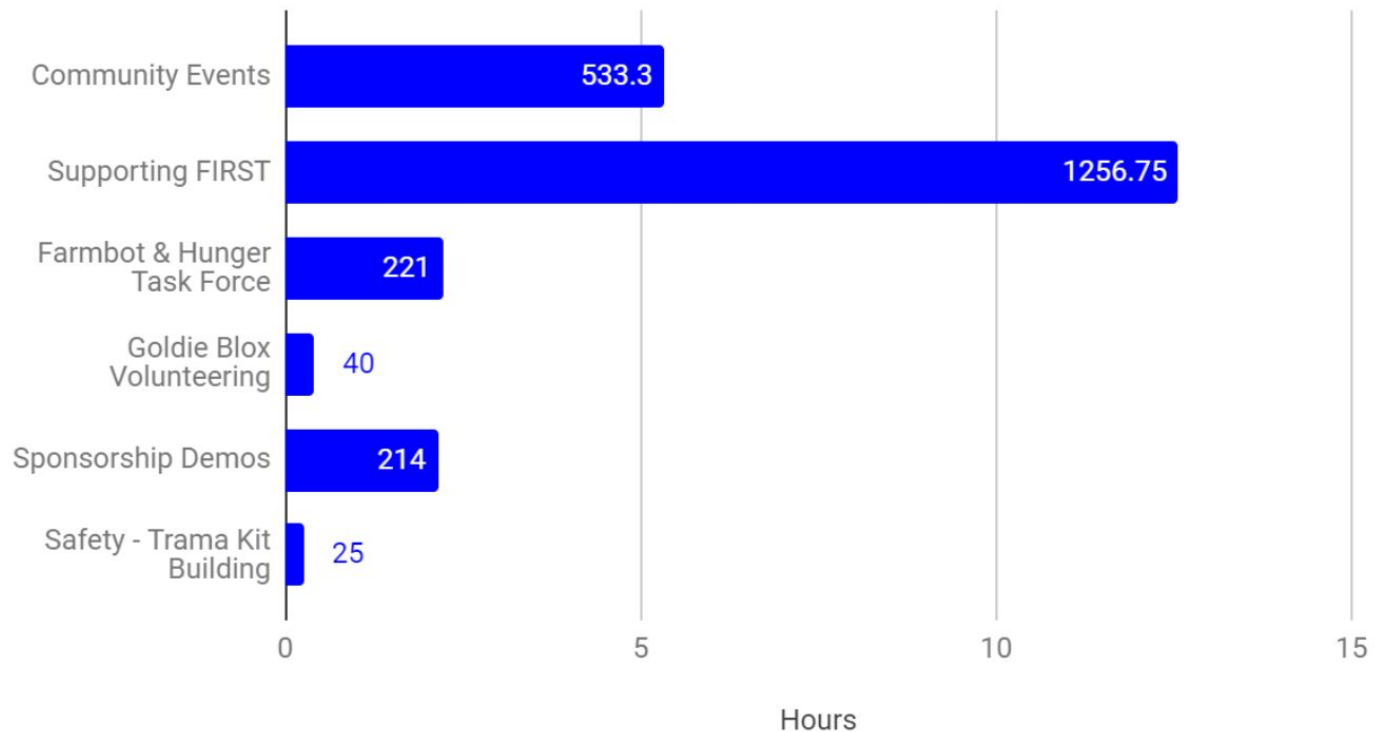
**FIRST was brought to
7 public elementary
schools, and 2
community teams.**

108 elementary students
now involved with FIRST



FIRST Outreach

Round Table Robotics Impact Hours



FLL INVOLVEMENT

In order to sustain any business, interest is necessary. One way Round Table Robotics gains and maintains team members is by keeping students interested from early on. We did this by **mentoring 8 different FLL teams** during the 2018-2019 season. We have mentored a total of 24 teams in our four years as a team. This gets students involved with STEM, thinking, and problem solving from an early age. We also help run an FLL summer camp, assist in programming workshops, and volunteer at *FIRST* scrimmages, regionals, sectionals, and kickoff events.

In addition,, this year we planned and hosted our **third annual FLL regional**. Forty FLL teams attended, and as a team, we gained 489 impact hours. At this regional, 100% of STEM Club members volunteer to help plan and organize the day.



FLL JUNIOR

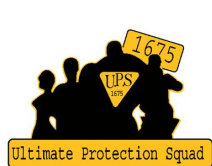
When younger students become interested from a very early age, they tend to stick with what they love to do. The second way Round Table Robotics keeps younger students interested is through FLL Jr. This year our team **started 18 FLL Jr teams** which were 100% mentored by our STEM Club students. This increased STEM involvement from zero to **108 students** at an elementary level learning, creating, and becoming engineers and innovators.

Not only did we mentor these teams but we also held an **FLL Jr Expo** on the same day as our FLL Regional. All 18 of our FLL Jr teams attended and presented. This has allowed us to share numerous levels of FIRST with the elementary school kids. They started the morning in their very own events were able to watch the FLL robot games in the afternoon. There was also the opportunity to watch a different FRC team demo their robot.



WISCONSIN COALITION

RTR improved collaboration by creating the Wisconsin Coalition, a **connection of 10 Wisconsin teams**. Bimonthly meetings allow students to build relationships with local students who have similar goals and aspirations. The meetings also encourage idea sharing amongst new and more established teams, with the goal of finding more efficient and effective ways to share *FIRST*. Based on the philosophy of cooperation, the Wisconsin Coalition reminds us that we're all trying to increase *FIRST* participation and STEM learning.



Not pictured:

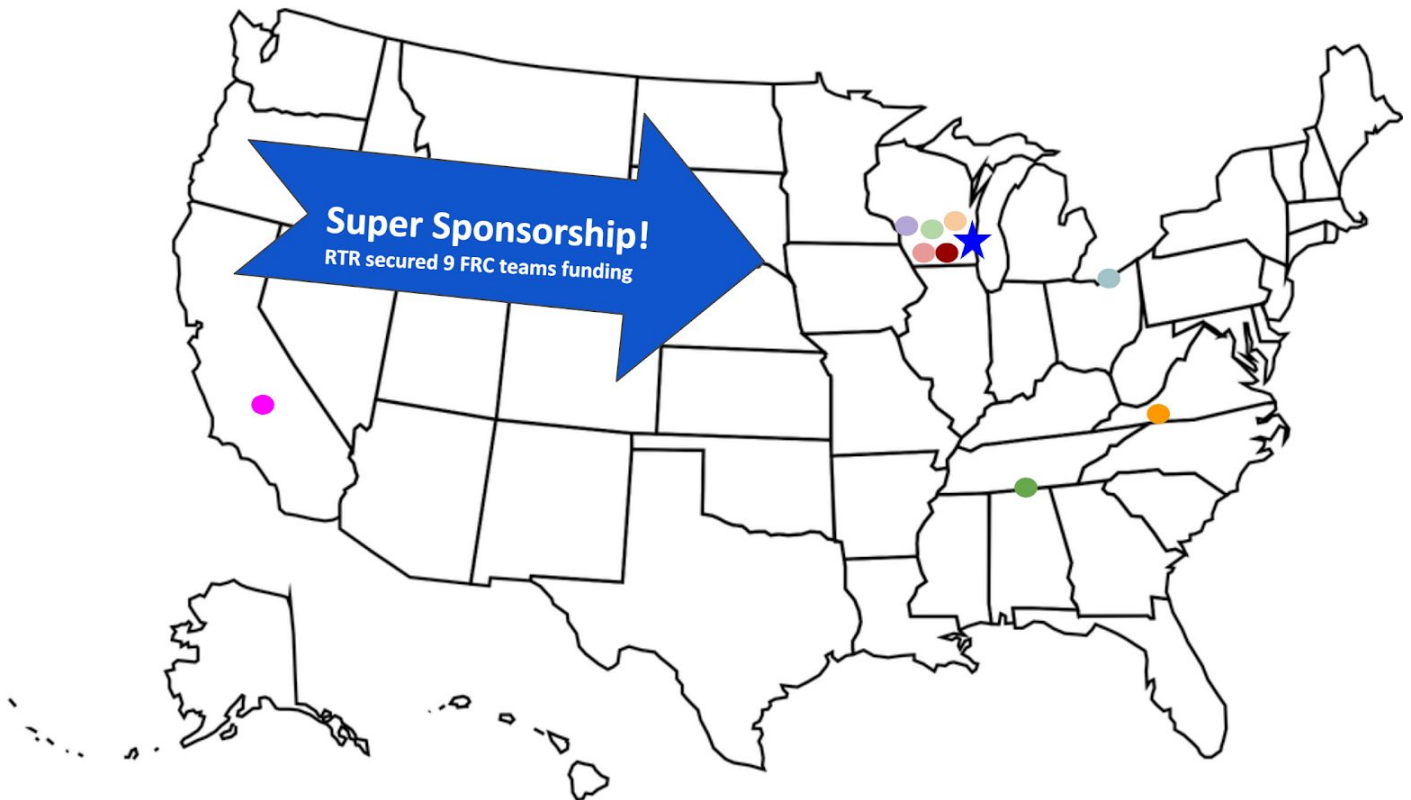
- 4247- CougarBots
- 6643- Walnuts and Bolts

We are in initial discussions with Team 537 - Charger Robotics to merge the Wisconsin Coalition with the Waukesha Coalition. By merging these two coalitions we will have greater opportunities to share ideas and help younger teams become more established. The future merger of these two coalitions would increase our FIRST footprint in Wisconsin.

SUPER SPONSORSHIP

In order to help other *FIRST* teams beyond our community, we have been working with two of our sponsors, PPG and ZUND, to secure grants for numerous new FRC teams. This is our way of helping teams stay sustainable while they learn how to fund themselves. It also helps these newer teams establish initial relationships with nearby businesses with the goal that they will become long term. Through what we call the SUPER SPONSORSHIP, in 2017, 8 teams across the United States were reached and \$38,000 was granted. This continued in 2018, with another sponsor, Zund, who encourages their clients to sponsor *FIRST* teams near their locations. Two teams were secured grants with more to come. Collectively, **we secured 9 other FRC teams grants** to start up their teams. Work begun by RTR is impacting FRC teams throughout the country.

- ★ Us- Round Table Robotics, 1792, Oak Creek WI
- UPS, 1675, Milwaukee WI
- Red Cat Robotics, 6670, Milwaukee WI
- Laser Robotics, 2077, Wales WI
- Walnuts and Bolts, 6643, Racine WI
- Real Robotics, 607, Racine WI
- The Mavericks, 2252, Milan OH
- Golden Hurricane, 5858, Huntsville AL
- Madawgs, 3258, Martinsville VA
- Knightrise, 5678, Valley Glen CA



DEMONSTRATIONS

RTR gains interest and awareness by hosting community demonstrations. We have demoed our robot at local businesses and venues such as McDonalds, Georgie Porgies, St. Francis Library, Summerfest, Oak Creek National Night Out, and FLL

events. We participate in the Oak Creek 4th of July and Homecoming parades to increase awareness. We also have ongoing sponsor demos and thank-you tours to keep them well informed. These tours allow our sponsors to see the benefits of their contributions to the success of the team and provides an effective personal connection. To gain new sponsors, we go to local businesses and give demonstrations and business presentations as well.



VOLUNTEERING

To give back to our community we've volunteered at numerous soup kitchens, such as St. Bens, in Milwaukee, where we served dinner to 306 homeless individuals. We even served a fish fry at the American Legion in our city every Friday for 6 weeks. All these events spread *FIRST* to over 3,000 community members. Additionally, we boxed food for low income senior citizens at Hunger Task Force. We reached 1,880 people, by loading 47 pallets, which is equivalent to over 52,000 pounds of food. Our team also harvested at the Hunger Task Force farms to provide fresh food to those in need.



FARMBOT

In STEM club we delve into numerous projects such as creating and managing agricultural robots. FarmBot is an open source robot that autonomously manages a garden based upon how we program it. We have assembled and installed the robot at



our local Hunger Task Force Farm. This project has taught our team members how to work with the tools to assemble the robot and the language to program it. We learned how to communicate with numerous companies, prioritize tasks and manage our time. All food grown with FarmBot will be donated to economically disadvantaged senior citizens. This relationship creates a unique partnership of technology and service to others.

STEAM FAIR

Last year members of Round Table Robotics visited the Milwaukee STEM Fair. The STEM Fair presented an opportunity to bring this resource of applicable learning to the students in our school district. Round Table Robotics has made it their mission to plan, organize, and host a STEAM fair in Oak Creek. Not only will it encompass Science, Technology, Engineering, and Math, but it also includes Art. Oak Creek has a huge interest in STEAM, as our *FIRST LEGO League*, *FIRST LEGO League Jr* and *FIRST Robotics Competition* participation numbers can attest to, yet our community hasn't never had a fair like Milwaukee's. Our first ever STEAM fair will take place on April 30, 2019 and will encompass all grade levels, starting from entire elementary school classroom groups, all the way to individual high school groups. Scholarships will be given to the winners via sponsorships from local businesses and community donations.



GOLDIEBLOX

Annually, the women on our team pair with the Girl Scouts of Southeast Wisconsin to host and run a girl scout camp called GoldieBlox challenge. Here, female members of RTR teach Girl Scouts ages 6-9 about topics such as



friction and forces. The Scouts later use that knowledge to create and race model cars. At the end of the clinic, the women of RTR show the scouts our robot and let them tour our shops. We are so happy that the Girl Scouts of America have created these new opportunities in STEM and it's our pleasure to participate. We see the number of women in our team grow when we participate in more events like these. In fact, from the first year of our team, the number of **females on RTR has increased by 30%**. We strive for these clinics to show future engineers the wonders of STEM and spark an interest to continue in these endeavors.

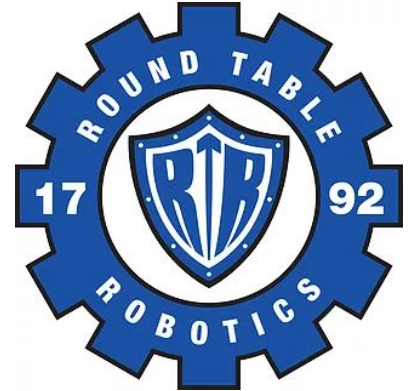


Impacting Perceptions



Team 1792

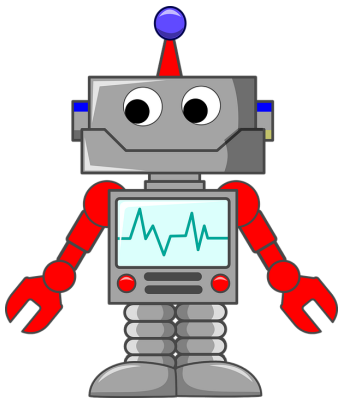
By the Numbers



30
Outreach Events

2000+
Outreach Hours This Year

9000+
Outreach Hours All Four Years



26
Sponsors

5
Social Media Platforms

22
Safety Projects and Initiatives

Where have we been?

RTR is always volunteering, with the ultimate goal to spread FIRST into the community, as well as leave the world a little better than we found it. We strive to create conscientious and kind students who enjoy giving back. Furthermore, we take every opportunity to spread FIRST as far as we can reach, and even beyond!

2018-19 OUTREACH

- 4th of July Parade
- Homecoming Parade
- GoldieBlox
- Lions Fest
- Hunger Task Force Harvest
- FarmBot work days
- FLL Regional & FLL Jr Expo
- Georgie Porgie fundraiser and demo
- Indy Rage offseason event
- National Night out demo
- Oak Creek Summer Soulstice
- Pack Expo Trade Show
- Forest Home demo
- Zund demo
- Yaskawa demo
- School Board demo
- State fair demo
- Lions Fest demo
- Rexnord demo
- City Council meeting
- Grunau demo
- School Board demo
- Scouting the Zoo demo
- PPG demo
- Nucor demo
- Salvation Army
- FLL mentoring
 - Kenosha (1)
 - Saint Matthews(1)
 - West Middle School (3)
 - East Middle School(2)
 - Cudahy Middle School (1)
- FLL Junior
 - Forest Home Elementary (4)
 - Oak Creek Library (2)
 - Oak Creek Elementary Schools (12)

MINGLING WITH MARKETING

This year, we created a unique partnership with Oak Creek High School's marketing class. The STEM Club benefited from fresh branding ideas and the marketing class learned more about the field of STEM proving that RTR is beyond simply building robots - it is also a fully sustaining business that strives to grow! The marketing class had a final exam project to design giveaways that will get our team noticed and remembered. Here are the popsockets they proposed for our team. In addition to the great idea, the partnership also sparked interest for more business students to join STEM club in the future.



Safety Outreach

Dead Battery Project

The Dead Battery Project seeks to create awareness of the issues of sexual harassment in the field of STEM. Men and women understand the expectation of appropriate behavior and women are empowered to remove themselves from uncomfortable situations. At every competition we attend, such as the Milwaukee regional and Detroit championships, we spread the word about the project. The goal is that if any woman is in a situation she feels uncomfortable in, she can say to another female “My battery is about to die.” This is a code word amongst women that means someone needs help getting out of an unwanted situation. In order to increase awareness of the project, we put cards and stickers in the bathroom. Our goal is to help every girl feel safe in STEM, a traditionally male-dominated industry. Being outnumbered in STEM can often make it difficult for young women, and we feel the Dead Battery Project will improve the situation, one sticker at a time.



National Night Out

Annually we demonstrate at Oak Creek “National Night Out.” This is a city event in which we partner with our sponsor Master Lock and hand out over 400 bike locks. We not only help keep our community members’ belongings safe but also increase the general public’s interest in our team’s safety program and safety policy.

Trauma Kits To Sponsors

In order to help other business be prepared for any situation, we have connected three of our sponsors, Nucor, Master Lock, and PPG with the Oak Creek Fire Department to secure trauma kits in their facilities. These businesses are production facilities that work with large machinery. Owning and understanding these kits will be vital in case of an emergency.



Sponsors

We secured a sponsorship with Red Wing Shoes to provide our team members proper safety attire. They have agreed to give any student or mentor on our team a 16% discount on their safety shoes. This partnership is one way in which we demonstrate our goal of proper safety and protection equipment.

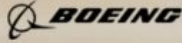
Nucor Inspection

This year, RTR created a new tradition of bringing our sponsor, Nucor into our shops during a meeting. Nucor was able to share their world-renowned safety program with our team. They also completed a thorough inspection of our shops and provided recommendations to ensure a safe environment.



DESTINATION:
**DEEP
SPACE**

Presented By



Recognitions

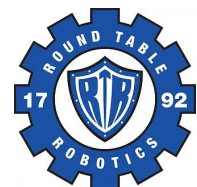
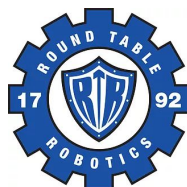
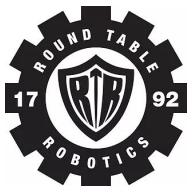
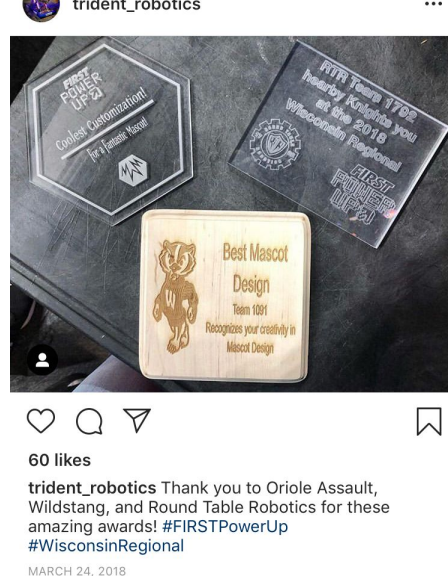
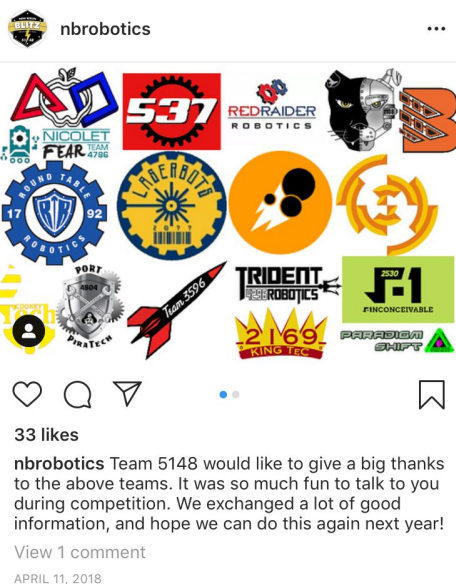
Team 1792



Instagram Shoutouts

RTR values networking and making connections with other FRC teams. We recognize that social ties with other students who have similar interests as us not only help us grow as innovators and thinkers, but also help us spread and encourage STEM involvement. Our social media allows us to create friendships!

Below are all the shoutouts RTR has received via Instagram!



Print Shoutouts



Patch

Successful FIRST year for Oak Creek's robotics team

"This is going to be tough," thought the Round Table Robotics team as they watched the unveiling of the 2016 challenge for the FIRST (For Inspiration and Recognition of Science and Technology) Robotics Competition (FRC). "The challenge looked intimidating at first, but quickly became less and less intimidating as we started to work together and build," said sophomore Ryan Hansen. Round Table Robotics, Oak Creek's student-led FRC team, worked together to build and program a game-playing robot to compete against other robots from around in the world.

in pursuing STEM related fields in college," Mendola continued.



Robotics goes far beyond building a robot; this team of amazing students work together to spread the mission of FIRST while building self-confidence and leadership and life skills. Under the guidance of parent and sponsor mentors, students get real-life, hands-on experiences, like creating the team website, making videos to share progress with sponsors, and using machinery to create custom parts for the robot. FRC is designed to inspire students to seek careers in the fields of science, technology, engineering and mathematics.

This is the first year Oak Creek High School has had their own robotics team. "This is a wonderful addition for Oak Creek as FIRST provides an inspiration of science, technology, engineering and mathematics (STEM) to students by building positive relationships and experiences through the exposure of real-life challenging tasks," said Dina Mendola, a parent mentor for the team. "Robotics has had a positive impact on our students with their academics, building work-related skills, and community outreach, and has also increased their interest

As a first year team, Round Table Robotics could not waste any time setting the stage for a successful build season and worked to find a proper work space, gain community support, and establish bylaws. "The bylaws helped us set the structure of our team, determine procedures and gave us guidelines to conduct business so our team could be successful," said sophomore Graham Mendola. The team was also able to secure over \$30,000 from sponsors like PPG, Master Lock and Rockwell Automation.

Last month, the team competed at the Regional Stronghold Robotics Competition at the UW-Milwaukee Panther Arena. Despite some unexpected challenges along the way, the team ended with a strong performance. "This competition was an amazing experience for us," junior Donovan Scheels stated. "We may have had our challenges and hardships as the season progressed, but through it all, we grew closer and learned new skills we can use as we push our way forward through life."

Community Corner

Oak Creek Robotics Team Competes Nationally, Welcomes New Members

Team 1792 Round Table Robotics recently competed against 54 other Wisconsin area teams.

By News Desk, News Partner | Mar 27, 2018 1:10 pm ET

Like 210 Share



The Future belongs to those who Innovate and Explore

A group of students from the Oak Creek High School STEM club participated in the 2018 FIRST Robotics Championship this past week, in Detroit Michigan.

Although not selected for an advancing alliance the team had a very respectable performance. Finishing 28 out of 67 with a 6-4-0 record, their robot, Highrise, had zero breakdowns and performed well. Hailey Mendola was awarded a Safety Star of the Day award, as the team's safety Captain.



Fun was had by all. There are additional images forthcoming from our Henry Ford Museum tour as well. Thanks for all your support. **Congratulations Roundtable Robotics.**

Coming this spring:

- Another feature in The Current!
- Not Pictured:
- 2 more features in the Blueprint

OAK CREEK SUMMER 2018

CURRENT

MAGAZINE

OAK CREEK FRANKLIN JOINT SCHOOL DISTRICT ROUNDTABLE ROBOTICS

ROUND TABLE ROBOTICS WINS TOP AWARD

On March 24, 55 teams from eight states gathered to compete in the Wisconsin Regional FIRST Robotics Competition at the UW-Milwaukee Panther Arena in downtown Milwaukee. FIRST (For Inspiration & Recognition of Science & Technology) Robotics Competition is an international, high school robotics competition. Teams of high school students, coaches and mentors work together to build and program a game-playing robot to compete in challenges against other robots from around the world. The teams also compete for technical and culture awards that celebrate creativity, innovation, professionalism, business practices and community involvement. In addition to taking their place in the robot competition, Oak Creek High School's Round Table Robotics team won the Engineering Inspiration Award, that celebrates outstanding success in advancing respect and appreciation for engineering within a team's school or organization and community. As the award recipient, the team advances to the World Championship and their \$5,000 entrance fee is paid by NASA (National Aeronautics and Space Administration). "We are so proud of how the team has come together and grown

over the last three years," team advisor Lisa Marshall shares. "The students have stayed committed to becoming the best that they can be. Whether it is an essay, a drive train or developing a manipulator to pick up a cube, the students worked together to develop their ideas," Lisa continues. "I believe we won the engineering inspiration award because our team is so well rounded," says sophomore Erin Marshall. "Yes, we built an amazing robot with PID loops, ultrasonic sensors and a drive train, but we also are running a business with a main goal of helping our students be ready for the world by changing it," Erin explains. One of the guidelines for the Engineering Inspiration Award is to show measurable success of the student and effectiveness of the team's community outreach efforts. This team of amazing students work together to spread the mission of FIRST while serving their community. "We look at how much we love STEM (science, technology, engineering and math) and think, 'how can we spread this feeling to more people?' and that's how we initiate projects that impact our community," Erin adds. This year, the team has mentored eight FIRST LEGO League (FLL) teams in Oak Creek and founded FLL Team 33415 at the Boys & Girls Club of Kenosha. Last December, the team hosted

a 36-team FLL Regional Tournament at East Middle School, with more than 400 FLL team members, coaches and mentors attending. The team also takes part in community events, like marching in the 4th of July parade with their candy robot and taking part in Oak Creek's National Night Out event. Plus, the team volunteers at soup kitchens and for the Hunger Task Force. For the team, this award means their hard work has paid off. "From designing the robot to our community outreach, we are making a difference in Oak Creek. It's just like FIRST always says, that in the spirit of the mind anyone can go pro, and this award just proves that our team members are well on their way to becoming the next world-changing inventors and innovators," says Erin. Before taking their robot, affectionately named "Artemus," to Detroit, Round Table Robotics will be finishing up changes to their robot and researching the other teams that will be attending. "We love it when students collaborate and compare ideas with different teams to increase the impact FIRST has all across the country," Erin continues. "We hope to not only do our best in competition in Detroit, but also seek to bring back knowledge from other teams to help better our own," she adds proudly.

Oak Creek High School junior Jessica Skroda poses with Artemus, the Oak Creek Roundtable Robotics team's robot.

Sponsors



**Rockwell
Automation**



**LADISH Co.
FOUNDATION**



**Oak Creek-Franklin
Joint School District**

REXNORD



swiss cutting systems



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GRUNAU

YASKAWA

The Association for Packaging
and Processing Technologies



NUCOR



We Keep them in the Loop!

RTR always maintains a mutual partnership with our sponsors. We do this a few ways:

Weekly Update Build Season Videos

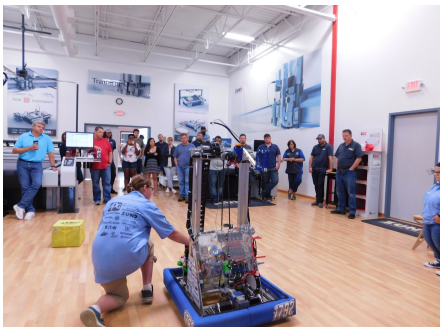
Weekly Update videos, produced and distributed by RTRs media CDT, allow sponsors to see where their money is going and what we are accomplishing with it. It also provides the opportunity for them to see our brainstorming process, prototypes, and designs, which many sponsors really enjoy. We often hear that it's very cool to see kids critically think at the level and speed that we do, and the videos allow them to be a part of it.

Open Door Policy

Every one of our meetings is open to our sponsors. This has led to 10 of our 20 mentors coming to the team from our sponsors.

Thank You Tour

Every summer, we travel to all of our sponsors and demo for them, thank them, and deliver a plaque that we build using a game piece. It's a nice way for them to see what we have accomplished with their help, and how much we appreciate them.



Media

Masters at MATC

Members of our media team took a videography class at the Milwaukee Area Technical College (MATC) over the summer. They had a blast, and noted the super cool facilities and equipment! So, this year, we contacted the teacher and paired with MATC while making our chairman's video! This allowed students to experience media at a more professional level.

Connecting with other FRC teams

Our social media has allowed us to connect with other FRC teams and learn from one another. We've conversed with over 30 different FRC teams via the internet, and shared materials and advice. This also creates some personal connections with other people our age, and seeing those teams at competition is awesome.

Over 4,800 Views



YouTube

372 Instagram Followers



244 Twitter Followers



457 Facebook Followers



CONTACT US

Website:
Roundtablerobotics.com

Email:
FRC1792@gmail.com

Facebook:
[@RTR1792](https://www.facebook.com/RTR1792)

Instagram:
[@roundtablerobotics](https://www.instagram.com/roundtablerobotics)

Twitter:
[@FRC1792](https://twitter.com/FRC1792)

YouTube:
[@FRC1792](https://www.youtube.com/FRC1792)

Chairmans Submission

Team 1792



Chairman's Essay

Every fire is ignited with a spark. Every forest starts with a seed. Every passion is discovered through inspiration. Kitty O'Brien Joyner, the first woman engineer to work for NASA and one of the most esteemed electrical engineers of all time,

discovered her love of engineering, and specifically wind tunnel solutions, through her math teacher. Her teacher encouraged her to learn and seek admission to the University of Virginia's all male engineering program to continue her studies. Just as Joyner had encouragement in her search for more knowledge, the goal of Round Table Robotics (RTR) is to facilitate that spark, seed and inspiration with other students and the community so that they, too, can reach for the stars.

RTR was created in 2015 as a split-off from a community team with the goal of bringing STEM to Oak Creek High School (OCHS). With a sturdy foundation of experience gained from the initial team, we expanded FIRST to a galactic level and took our first steps. We built ongoing relationships with our sponsors by providing weekly build season progress videos and maintaining an open-door policy. Relationships begun that year continue today through mentorship and ongoing financial support. Our focus on safety began in 2015, and the entire team was trained in first aid. Of course we also learned to build a robot from scratch! RTR went to one regional, came in second to last place and the competition journey in 2016 ended there. But our team was on its way! We began at OCHS as an extracurricular activity and became a Varsity Sport through growth and relationship building.

2016 was the year our team established roots, made connections and built something great. Despite our competition defeat, we still wanted to learn and understood that the end of build season brought more opportunities. We created a training system called "Material of the Month" where students were trained off-season in materials such as fiberglass that were not used in building the previous season's bot. RTR demonstrated our robot in the community. We drove the robot in our town's 4th of July parade and at Summerfest, the largest musical festival in the world. We began developing RTR into a club that extensively gives back to our community. We volunteered at Hunger Task Force, boxing food for underprivileged senior citizens. Our team continues to volunteer there yearly, creating a relationship that laid the groundwork for a future collaborative project. We also volunteered at a Fish Fry for veterans and held a fundraiser at a roller skating arena.

RTR wanted to make sure we were sustainable as an FRC team, so we began what would become a secure relationship with local FLL teams. In 2016, we ran a programming workshop and volunteered at a summer school FLL class. We helped create an all-girls FLL team and 2 of the 5 girls are now members of RTR. In addition, our team volunteered at numerous FLL events including scrimmages, regionals and sectionals.

Transitioning into 2017, our second year, we were growing into a binary star. A vital decision was made to organize our team. We created a system of a team captain who oversaw CDTs (component design teams) encompassing the robot build, business operations and safety. This system allowed us to expand our goals. For example, with a safety CDT we could broaden our training by learning first aid and being trained on trauma kits. Trauma kit training was only possible with a safety CDT who could build a relationship with the local police and fire departments.

RTR intensified our focus on FLL. In 2017, we mentored 9 FLL teams in our community plus initiated and hosted the inaugural Oak Creek FLL Regional. Over 2000 volunteer hours were gained and 28 FLL teams attended. This regional rocketed RTR into a team that truly is about more than a robot. It's a team that is creating thinkers, innovators, managers and business leaders. So we began to look ahead. We wanted to further our outreach and presence in the community. We created a plan encompassing goal projects, developed timelines, action plans and resource needs. This was the birth of our three-year plan; a plan which is now reevaluated and expanded upon yearly.

In 2018, our third year, the number of big projects RTR began eclipsed all prior seasons. Our three-year plan, along with a secure and sustainable structure, made it possible. We grew the organization from a team with one captain into a team with two branches and two captains; technical and operations. The operations (business side) underwent intense development and the media and marketing team found ways to expand our reach. We created a partnership with our high school marketing class to enhance our marketing plan, develop new ideas to promote our social media presence and design unique giveaways for competitions.

Another significant development was the expansion of our program. With the goal of increasing students' experiences in STEM year-round, we turned our one FRC team into an overarching STEM club. STEM club allows any student the opportunity to join and participate in various activities throughout the year. It has multiple branches each with a focus; such as FLL. In 2018 STEM Club mentored 7 teams, including a community team created with support from our partner Amazon. Our club also held the second annual Oak Creek FLL Regional, where 36 teams attended, 8 more than the prior year, and at which 2 FRC teams demonstrated their robots.

Two other branches of STEM Club, FarmBot and ParadeBot, began in 2018. FarmBot is an autonomous, open-source farming robot that created a unique partnership of technology, agriculture and community service. Building on our long history of volunteering with Hunger Task Force, RTR was able to implement FarmBot on their grounds. All food grown is donated to those in need. In years to come, we plan to add more FarmBots to other public locations; linking technology, agriculture and service. ParadeBot is an annual off-season project that creates a candy-dispensing parade robot. In a build-season like environment, students learn vital tech skills while creating a marketing opportunity. We demo this robot at many different venues and events, from public libraries to National Night Out. Participating in a Milwaukee Public School STEM fair inspired us to launch our own STEAM fair in 2019.

Safety is RTR's number one core value, so we expanded our safety protocols in 2018. RTR not only continued with trauma kit training but created a new system to ensure shoproom safety. Our goal was to know at a glance if a student was qualified to use specific pieces of machinery. RTR's Carabiner Collection was born! Each student is given a carabiner and color-coded clips indicating specific machines are added for each training they receive.

RTR continues our goal of developing strong relationships with sponsors. The open-door policy we created in 2015 has led to 10 of our 20 mentors coming from sponsors. In just four short years, our sponsorship grew from 11 to 22 companies. These companies return each year as they see the impact of their support on our students and community; plus the opportunity for STEM club students to become their future employees.

Due to our strong sponsorship support, RTR was in a solid financial position in 2018. However, we recognized that many new teams might not be as fortunate; therefore, we sought a solution for rookie teams with financial struggles: the Super Sponsorship. Last year, we worked with our sponsor, PPG, to connect rookie teams across the nation with their nearest PPG's grant money. Through this collaboration \$28,000 was provided to 8 teams and sparked several of our other sponsors to create similar efforts. Specifically, Zund now encourages their clients to sponsor FIRST teams near their locations and Solid Stone Fabrics in Virginia is sponsoring their own FRC team. Work begun by RTR is impacting FIRST teams throughout the country. In acknowledgement of our outreach, RTR was grateful to receive the Engineering Inspiration award at the 2018 Milwaukee regional. This accomplishment encouraged us to innovate additional ways we can impact our community and provide opportunities for students to learn about STEM.

The offseason following the 2018 competition season was monumental. The founding members of RTR graduated allowing newer students to step up into leadership roles. We attended two offseason events, competing at each with an all-girls drive team. We were in the winning alliance at one event and finalists at the other. These two competitions created a growth mindset for the rest of the year and influenced us to bring FLL Jr to Oak Creek. Through a successful \$10,000 grant application, RTR started 18 FLL Junior teams, impacting 108 elementary students. We added an FLL JR expo to our FLL Regional so students involved could see the stepping stones to FRC.

RTR improved collaboration by creating the Wisconsin Coalition, a connection of 10 Wisconsin teams. Monthly meetings allow students to build relationships with local students with similar goals and aspirations. Based on the philosophy of cooperation, the Wisconsin Coalition reminds us that we're all trying to increase FIRST participation and STEM learning.

For 2019, RTR is planning a STEAM fair which will provide opportunities for students interested in STEM and art. Many kids are participating, from elementary school classroom groups to individual projects in high school. Scholarships will be provided to the winner. We are doing this while continuing our work from prior years. But most significantly, we recognize the impact this team has on its members. In our 5 years, 100% of our alumni are pursuing STEM-related careers and nearly half of our alumni have received STEM-related scholarships. Four students have gained internships in engineering through team and mentor help. RTR is influencing students' futures and blasting them into deep space.

Short Answer

Briefly describe the impact of the FIRST program on team participants within the last five years.

RTR members built a versatile student-led structure and created a system of outreach activities. Perhaps our biggest impact has been on the students, themselves:

- -100% of alumni graduated High School.
- -93% of alumni are attending College, one is a nuclear engineer in the Navy.
- -100% pursuing STEM-related careers.
- -43% of alumni received STEM-related scholarships.
- -4 alumni interned in a STEM field.

Describe the impact of the FIRST program on your community within the last five years.

RTR members reach out to the community by:

- Logging 2194.55 impact hours this year; totaling 9196.05 hours over 3 years.
- Demoing at Summerfest, National Night Out, City Summer Solstice and local restaurants.
- Mentoring 29 FLL teams and 18 FLL Jr teams
- Preparing a STEAM Fair for our school district.
- Conducting Girl Scout GoldieBlox STEM badge clinics.
- Helping the Oak Creek Fire Department build trauma kits.

Describe the team's methods for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative.

RTR promotes FIRST by:

- Participating in the Oak Creek 4th of July and Homecoming parades, distributing flyers describing FIRST and STEM club.
- Building a special robot for parades that distributes candy, blows bubbles and plays music.
- Sponsoring a booth at National Night Out.
- Establishing and participating in the Wisconsin Team Coalition-a collaboration of FRC teams.
- Developing FarmBot, linking technology, service, and agriculture

Describe examples of how your team members act as role models and inspire other FIRST team members to emulate.

- Our student leadership consists of a Chief Operating Officer, a Chief Technical Officer and Component Design Team captains who encourage:
- Any OCHS student to join STEM club any time during the year. Currently 36 members in team 1792; 40% female.
- 100% student mentoring: either one of the 18 FLL Jr teams we started or the 9+ FLL teams we have mentored.
- Training students on machines, providing weekly safety briefings and tracking who was trained by wearing color-coded clips on carabiners.

Describe the team's initiatives to help start or form other FRC teams.

We work with 2 core sponsors, PPG and Zund to secure funding for other FRC teams through connecting these teams with their grants:

- PPG generously provided money to 8 FRC teams, across the US, totalling \$28,000. We continue to match FRC teams with this great opportunity.
- Zund encourages their clients to sponsor FIRST Teams near their locations. Solid Stone Fabrics in Martinsville, VA is now sponsoring Team 3258 - Madawgs.

Describe the team's initiatives to help start or form other FIRST teams (including Jr.FLL, FLL, & FTC)

We believe in STEM for everyone, everywhere. Some projects in helping form teams are:

- Started 18 FLL Jr teams in 2018 and mentored all of them; 4 are in inner-city public schools and 2 are at private schools, which do not have any STEM-based classes
- Hosted our third annual FLL regional and added an FLL Jr Expo in 2018
- Cultivated interest with year-round STEM club
- Planning STEAM fair for grades 1 through 12 to promote STEM education

Describe the team's initiatives on assisting other FIRST teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the FIRST program.

We sponsor and judge many events. The biggest is our FLL Regional and FLL Jr Expo. We showcased all levels of FIRST by inviting an FRC team to demo their robot.

- Hosted 3rd annual FLL regional for 40 teams and added FLL Jr Expo for 18 teams
- Mentored an FLL summer class at middle school
- Our mentors judged a total of 23 FIRST events
- Showcased RTR at freshman orientation to encourage joining
- Gave 6 FRC teams shop tours, Chairman's presentation help and fundraising guidance

Describe how your team works with other FIRST teams to serve as mentors to younger or less experienced FIRST teams (includes Jr.FLL, FLL, FTC, & FRC teams).

Our team enjoys mentoring younger teams:

- Mentored 6 FLL teams who were invited to our annual FLL regional.
- Started 18 FLL Junior teams in 2018 (100% of RTR students mentor).
- Gained 911.25 mentoring impact hours in 2018, and 684 in the previous 2 years.
- Helped start Wisconsin Coalition to encourage idea sharing amongst new and more established teams.
- Showed our facilities, shared team organization, presentations and fundraising ideas to 6 other FRC teams.

*Describe your
Corporate/University
Sponsors.*

The following sponsors offer mentors, time, knowledge, grants or in-kind donations to RTR team 1792:

PPG	American Legion
Ladish Co. Foundation	Solid Stone Fabrics
Rockwell Automation	Global Eagle Inc.
Zund	Rotary International
Lions International	Hanna Trailer Supply
REXNORD	Red Wing Shoes
Master Lock	Oak Creek Franklin School District
Grunau	Empower
JM Brennan, Inc.	Caterpillar
EATON	Everbrite
NUCOR	Gilman Brothers
Aim	YASKAWA
Air Logic	

*Describe the
strength of your
partnership with
your sponsors within
the last five years.*

Team 1792 sponsor strength:

- Grew from 11 financial donors to 22 in 4 years
- 10 of our 20 mentors work for sponsors
- Long-lasting relationships with PPG, Master Lock, Rockwell, Yaskawa, AIM, American Legion
- Recognition on our competition shirts, website, printed media
- Send weekly update videos during build season to show progress
- Send thank you letters and handmade plaque at the end of every season
- Provide thank you tour over the summer to show how they contributed to the success of the team

*Briefly describe
other matters of
interest to the
FIRST judges, if
any.*

Motto: ***Round Table Robotics-gearing up for tomorrow.***

Our students are the leaders, inventors and designers of the future. RTR gives them the skills and mindset needed to succeed.