Chairman's Award - Team 3197

Print Close

2022 - Team 3197

Team Number

3197

Team Nickname

HexHounds

Team Location

Cedarburg, Wisconsin - USA

Describe the impact of the *FIRST* 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 *FIRST* programs as mentors/sponsors.

HexHounds prepares team members to excel in STEM careers through hands-on technical work with industry professionals. 100% of team members have graduated from high school and 95% have pursued STEM education at either two-year or four-year universities. Alumni and parents give back to the team through volunteering at outreach events and mentoring. Out of 7 total mentors, 1 is a team alumnus and 3 are parents. A team alumnus currently mentors FRC 8847, Milwaukee Cyber Cheese.

Describe your community along with how your team addresses its unique opportunities and circumstances.

Cedarburg's tourism-based community is home to nationally recognized festivals. This includes Strawberry, Wine and Harvest, and Winter Festival, which provide opportunities for fundraising and spreading the FIRST message by reaching individuals outside of Cedarburg. In the fall of 2018, team success led to the passing of a $59.8 mill, community-supported referendum with secured funding for expanding STEM education and robotics programs across all 5 schools in the Cedarburg School District (CSD).

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?

Outreach at Cedarburg festivals educates visitors about FIRST. Through outreach at Cedarburg festivals the past 3 years, 3197 has reached 10,000+ people beyond Cedarburg. 3197 has been featured locally in newspaper articles, throughout southeast Wisconsin through news segments and articles, and both nationally and internationally by being featured on a video series highlighting FRC robots called "Behind the Bumpers" which has been viewed 700+ times.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

Gracious Professionalism is best shown off the field. Last season, team member Leah R. was selected as a WI Region Dean's List Finalist for her work in establishing a marketing subteam on 3197 and instilling the Core Values of FIRST. Team members mentor HexHounds assisted FLL Challenge teams and volunteer as judges and referees for a team-ran scrimmage to prepare these teams for competition. Student mentorship fosters strong connections between the two programs, inspiring all students involved.

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

For the past 3 years, 3197 started and assisted 5 Webster Middle School FLL Challenge teams by mentoring and providing funds. In addition, 3197 assisted with the creation of 7 FLL Explore teams at 2 Cedarburg elementary schools. Team mentors plan on getting in contact with Southern Wisconsin FIRST Senior Mentor, Jane Blau, to help coordinate inviting area teams to the 3197 build facility and let them practice on a full-size FRC field before the 2022 Wisconsin Regional.

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?

During the summer, 3197 runs a 2-week summer robotics course through the CSD Summer Academy. The course is available for local 5th-8th graders, and gives participants the opportunity to build and program a LEGO EV3 Educator robot. During the last week, robots face off in a scrimmage that is similar to FLL matches. In the past 3 years, 67 children have participated in this course, with an average of 22 children per year (maximum enrollment is 24 due to limited resources).

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

Close relations with sponsor Wilo led to a $100k grant being used to fund a 4-year STEM expansion program across the CSD. This donation helped fund robotics kits for all CSD schools, a full-size FRC field at Cedarburg High School (CHS), and this year, was used to establish a STEM curriculum at all CSD elementary schools. The funding led to 30 teachers representing all 5 CSD schools learning STEM principles through "Maker-Centered Learning", a book written by members of Harvard's Project Zero.

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

The HexHounds pride themselves in creating an inclusive space for all to learn about STEM and robotics, regardless of gender identity. This season, 3197 is made up of 62% male, 27% female, and 11% non-binary/other gender-identity students. 100% of non-male members plan on pursuing a STEM career. Team members are involved with TEquity, a women in STEM club at CHS, and plans for 3197 and TEquity to collaborate in the future are likely.

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

Sponsors and community outreach provides enough funding to sustain both FRC and FLL. An established and successful FLL program at Webster Middle School provides a consistent flow of participants, and community involvement through outreach events provides publicity for both FLL and FRC. With more publicity and funding, FIRST can grow within Cedarburg and neighboring communities.

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

Community engagement helps 3197 recruit sponsors who play an integral role in the success of the HexHounds. HexHounds sponsors are always invited to visit our facility and attend team competitions to experience FRC first-hand and interact with team members. They are also kept up to date with weekly team newsletters and social media posts. Sponsors are also recognized on the team website, shirts, and banner, which is brought to both competitions and outreach events

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

Not all subteams on 3197 have mentors, meaning that students step into leadership positions to guide rookies and provide support. Rookies work closely with student leaders to learn skills and become elevated into a leadership position. In the future, 3197 hopes to have mentor support for all subteams, but still pushes for student-led subteams for student leadership sustainability within the team.

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

Team success brings forward a passion for STEM in Cedarburg, fulfilling the team motto of "changing the culture of our community". Creating FIRST programs educates young minds about engineering, and advocating for STEM education ensures high-quality STEM curriculum is implemented in all CSD schools. Team members fulfill this motto as well. Team member Kale S.' dedication to STEM has led to them being a NCWIT-WI Affiliate Winner of the NCWIT Award for Aspirations in Computing 2 years in a row.

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.

3197 is collaborating with the Cooperative Educational Service Agency #1 (CESA 1) to obtain the Carl Perkins Grant. This grant provides funding for technical education programs. Grant money would be used to fund FRC and potentially grow FIRST in communities that do not have easy access to teams. Respect in the community and neighboring ones has

led to companies such as Frank Mayer (kiosk company) and GenMet (metal fabrication) actively recruiting 3197 members and alumni as employees.

Essay

For the past 13 years, Team 3197, HexHounds has made strides to not only follow the FIRST message but embody it. By expanding FIRST, engaging our community through outreach, growing our reach through media, & advocating for STEM education, what began in 2009 as 6 kids desire to build a robot transformed into the orange bowtie representing STEM in Cedarburg in 2022. With these 4 ideas in mind, 3197 embodies the message of FIRST and changes the culture of our community & beyond.

Expanding FIRST
To foster a passion for STEM young, 3197 ensures that as many children as possible have access to a FIRST team. 3197 has 2 of 3 divisions in the FLL progression & assists a total of 12 teams within the Cedarburg School District (CSD). 7 of these teams are FLL Explore across 2 Cedarburg elementary schools (Westlawn Elementary School Dolphins & Thorson Elementary School HexPups) and 5 are FLL Challenge teams at Webster Middle School (14541, 26927, 42067, 42068 & 48362). 3197 has provided financial support for 1 FLL Explore team, assisted 2 FLL Challenge teams in obtaining grants, and students on 3197 help mentor all 5 FLL Challenge teams and volunteer as judges and referees at a 3197-ran event for these 5 teams to prepare them for competitions.

With approval from Cedarburg High School (CHS) administration, 3197 plans to expand membership to high schools that do not have a FRC team and are within a 20-mile radius of Cedarburg. This would bring in new potential team members from at least 5 area high schools and reach over 5000 students.

Through FIRST, HexHounds alumni leave the team & enter academia or other professional settings with the skills needed to take on real-world challenges. "I really believe that a lot of the skills that I learned within robotics I was able to put into practice. That was one of the biggest things that benefited me from being involved with the robotics program at CHS was being able to learn the basic skills in PLTW classes and then take those, and use them in robotics to really understand how they work, and how I could apply them to real-world situations, and then take those abilities into the college academia realm", said 2018 alumnus, Noah P. "Without robotics, I would not be prepared for my role currently in that team [Embry-Riddle AIAA Design-Build-Fly Contest - Team Captain]... All those skills transfer. I can show someone how to build something, teach them, and lead them effectively because of my time here with robotics."

Community Engagement
Partnerships serve as a necessary resource for success, and HexHounds utilizes all chances possible to incorporate Gracious Professionalism into our outreach.

Through partnerships, outreach is more meaningful, which is why FLL plays an integral role in outreach. Since 2018, our 5 FLL Challenge teams have demonstrated FIRST alongside 3197 at Eats & Expo at Wayne's Drive-in. The event annually reaches over 400+ community members and provides funding for both programs. These teams have walked alongside 3197 in the Cedarburg homecoming parade since 2018, an event that annually reaches 2500+ attendees.

Festivals are an important part of the culture of Cedarburg, & help bring audiences outside of our county, region, & state into Cedarburg. To the HexHounds, we see this as an opportunity to reach individuals about STEM and FIRST. Through the sale of concessions, we provide funding for both FRC and FLL Challenge & expand the message beyond the Cedarburg community. Within the past 3 years, 3197 has been active at 4 Cedarburg festivals, & reached nearly 10,000 individuals. However, the pandemic limited the number of fesivals we could do.

The message of both the HexHounds and FIRST shines in CHS. Our T-shirt cannon robot is a staple at sporting events, & a newly updated STEM wing with collaborative space for technical education & FIRST allows students to experience FIRST during the school day. Robotics is considered a varsity sport, & varsity letters are bestowed to members who are active with the team & outreach. Within the past 3 years, 20+ students have lettered.

Growth Through Media
With the COVID-19 pandemic putting outreach at festivals to a temporary halt, media has been more important than ever for reaching to individuals about STEM & FIRST. Our reach through media excites people about STEM & FIRST, & through media, we have reached audiences both locally & internationally. Within the past 3 years, we have reached Ozaukee county through 5 articles featuring FIRST, Southeastern Wisconsin through a FOX6 news segment about our Pancake Breakfast at Cedarburg's Winter Festival, & national & international audiences through a featured video on "Behind the Bumpers". Coupled with our social media following through YouTube channel views, Instgram & Twitter followers, & MailChimp subscribers, media has helped us reach an audience of 115,931 people. That is an audience nearly 10 times the size of Cedarburg.

Advocating For STEM Education

Essay - page 2

The future of STEM is constantly changing, and to meet this demand, STEM education needs to reflect the future. Noticing the need for new STEM curricula, the Cedarburg STEM Advisory Team was created in 2016, & consists of HexHounds students, mentors, & alumni working alongside Cedarburg teachers and local industry leaders. Together, the group worked & advocated for the implementation of new STEM facilities and curricula for all CSD schools through school board presentations, meetings with the CSD superintendent, & facility planning with architects & construction managers . The referendum, valued at $59.8 mill, had secured funding focused on "equipping students with experiences in...engineering and advanced manufacturing, robotics, artificial intelligence and coding, which are critical for future employability" (CSD Identified Needs). Team outreach, expansion, & success were the driving factors to initialize the referendum, & through partnerships & volunteering, the HexHounds promoted STEM & FIRST to 11,495 total voters, allowing the referendum to pass in the fall of 2018.

Because of 3197 and their close relationship to team sponsor Wilo, CSD was awarded a $100,000 grant for district-wide STEM education. Grant money was used to establish robotics and engineering curriculum through a 4-year plan. Money helped create elementary engineering modeling tools for K-5th grades classes in 2019, fund a permanent, full-size FRC field at CHS in 2020, fund VEX V5 classroom & competition kits & fund 2 VEX competition fields in 2021. This year, funding was used to establish Project Lead the Way curriculum & incorporate VEX IQ robotics to all Cedarburg elementary schools. These programs are here to stay, & will become permanent assets of STEM education for the CSD.

In addition, referendum funding was used to implement an "Elementary Engineering" program at all Cedarburg elementary schools. This program gives students in 4K-5th grade the opportunity to learn engineering principles through Rokenbok technology & an updated 5-step design & engineering process. The new process is "linked to ensuring that the 4K-5th grade-level engineering work we are doing connects to the 6th-12th content areas at our middle and high schools. The 5 stages are: 1) Understand the Challenge; 2) Brainstorm Solutions; 3) Build a Prototype; 4) Test & Improve; 5) Explain the Design" (Cedarburg 2.0 Full STEAM Ahead). With this simplified model, elementary school children have the skills needed to succeed in all forms of STEM education and all progressions of FIRST.

Team advocacy led to $16 mil being used to update the Technology Education Department at CHS. The department now includes a state-of-the-art combined metals and woodworking lab, an updated transportation laboratory, updated Technology Education classrooms, and dedicated space for FIRST and robotics. Accompanying that, CHS is actively implementing a robotics curriculum with several tiers of courses. With this new space, students at CHS can take the skills they have learned through existing Technology Education courses, and apply them with modern tools.

Our advocacy however, was not just exclusive to students within the CSD. With funding from Wilo, CSD staff have learned the "maker-centered" learning mindset. In 2020, over 30 teachers from all 5 Cedarburg schools read "Maker-Centered Learning" & its companion title, "The Power of Making Thinking Visible". These books teach "specific thinking routines to promote critical thinking in all content areas, with specific targeted focus on courses using the Design and Engineering Process" (Cedarburg 2.0 Full STEAM Ahead). Last year, 10 of these teachers were enrolled in a course through Harvard University taught by the authors of "Maker-Centered Learning" & "The Power of Making Thinking Visible". Like the books, this course teaches critical thinking skills, with an emphasis on the design & engineering process.

Because of the HexHounds drive to update STEM circiula, the 3021 students enrolled in a CSD school now have access to high-quality STEM education.

What Does the Orange Bowtie Mean Today?
While the orange bowtie is seen on the competition field, it is not just a symbol of competition. Through the past 13 seasons, we have taken what is considered by some to be fabric, & transformed it into a symbol of change. By embodying the FIRST message through expanding FIRST, engaging our community through outreach, growing our reach through media, & advocating for STEM education. As a team, we change the culture of our community 1 student, & 1 bowtie at a time.