

Chairman's Award - Team 4944

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2018 - Team 4944

Team Number

4944

Team Name, Corporate/University Sponsors

Chevron/Google&Hi Fives Robotics

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

25 Current Members: -100% plan to go college, 90% for a STEM field -85% want to continue w/ FIRST after High School -40% believe FIRST has helped them to choose a STEM Career Our 21 Alumni: -6 are active FIRST Volunteers; currently mentor FLL teams and volunteer at FLL, FTC, and FRC Regionals -19 are studying in a STEM field -Attend colleges including Harvard, Harvey Mudd, & CalPoly (\$40k STEM scholarship) -One Dean's List Finalist attends U.Rochester on a \$60k FIRST Scholarship

Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

-Over 1.4k volunteering hrs. for FIRST -7/13 Grand Valley high schools have FRC participation through 4944 -16/19 local FLL teams started, mentored or assisted by 4944 -Cooperative relationship with Riverside Educational Center to introduce STEM to underserved kids -400+ people reached directly through 20 student-led STEM camps and workshops in 2016-2018. -60+ Outreach Events reaching an est. 21k+ people directly -Hundreds of people reached at 3rd Grand Junction FLL Qualifier

Team's innovative or creative method to spread the *FIRST* message

-4944 has partnered with Central High School to develop a year-round FIRST-based curriculum to introduce local CHS students to a new form of STEM with school based participation in FTC -We hosted student-led Arduino, Build your own 3D printer, Java Programming, and Lego Robotics camps with 400+ participants -Teaching our STEM camps and promoting the values of FIRST as part of the WCCC community summer camp program, need-based scholarships are available

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

Student Led: All aspects of the team are led by students with mentor guidance Efficient: Student-leads are role models that guide their team during and beyond build season Inclusive: Team includes members from almost every school, private & public, in our area, offering need-based scholarships along with the creation of our Internship program Passionate: Members spend many after-school hours at our facility because they are dedicated to the FIRST experience

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

Our strategy for FRC growth is to plant seeds through the expansion of Jr. FLL, FLL & FTC. These programs will be actively integrated with FRC to create a feeder program to FRC. This will help us maintain The Hi Fives & in the future start another FRC team in the Grand Valley. In 2017 we also began our push to maintain the only other FRC team in Western Colorado who is struggling with funds. This year we are also looking into starting another FRC team in a mountainous town in Western Colorado.

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

The Hi Fives: -started the 1st and a total of 17 more FLL teams in the Grand Valley -started the 1st and 17 more Jr. FLL teams in 2016, 17, & 18 -hosted our 1st Jr. FLL Expo. in Dec. 2016, hosted 2 Jr. FLL Expo. in April and Dec. of 2017, and one planned for 2018 -started and mentor the first FTC team in our valley (2015-present), and founded the second team this year -planned, hosted and ran the 3rd G.J. FLL Qualifier, which spread the message of FLL to hundreds of community members

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

The Hi Fives: -helped grow FLL in the Grand Valley since 2012, mentoring 15 teams & assisting 16 teams -ran and host Grand Junction FLL Qualifier, assisting 16 Western Colorado teams. -for 3 yrs. 50+ Hi Fivers and parents volunteered 100s of hrs. at this event -assisted at the 2014 Mountain States FLL Qualifier as judges and game referees -assisted FRC Team 1332 during three build seasons with machining, CAD design, programming & financing -Helped 5 Jr. FLL teams with Lego Kits & 4 with funding

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)

-Hi Fivers have mentored 15 of 16 Grand Valley FLL teams and hosted numerous STEM workshops for members of these teams, and provided machinery and work space for three FLL seasons. -Hosted annual Drive-In Movie and Canned Food Drive for FRC, FTC and FLL bonding. -Hi Fives students mentor the first Grand Valley FTC team providing guidance with CAD and programming Hi Fives students mentored 8 Jr. FLL teams.

Describe your Corporate/University Sponsors

Chevron: financial & mentorship - 5 yrs Business Incubator: facilities & mentorship - 5 yrs City of Grand Junction: financial, community support - 3 yrs Western Colorado Community College: Use of machine shop, & facility for STEM Summer Camps. Williams grant obtained for joint funding for FRC & Jr. FLL teams. 2 yrs Reynolds Polymer: Financial & material - 2 yrs Google: financial - 1 yr Native Navigation: Financial, Facility & Mentor - 2 yrs Colorado Mesa University: Mentor & financial

Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years

Six mentors who are employed by our sponsors have provided 2500+ hours of mentorship. The Business Incubator Center has provided facilities for working, hosting camps and events, since 2013. The GJMakerSpace, Chevron, and the Business Incubator have been eager to teach new skills like machining, marketing strategies, public speaking, and provided donations of money, time, resources, and materials. We host an annual Spaghetti Dinner to thank our sponsors as well as reveal the robot.

Describe how your team would explain what FIRST is to someone who has never heard of it

FIRST is a life changing program designed to teach students the importance of teamwork, dedication, and discover the potential of STEM. FIRST instills students and mentors with goals to improve their character, have community-oriented minds, and gain real-world experience to improve themselves and others. To us, FIRST is not just about building a robot, but about spreading STEM to improve the future of our community and its youth.

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

-4944 is made up of 35% girls and minorities -In four years, we have won 2 Rookie All-Star Awards, 2 Highest Rookie Seed Awards, 1 Creativity Award, 1 Chairman's Award, and 1 Woodie Flower's Finalist Award. -Hi Fives students and mentors were instrumental in founding GJMakerSpace, making up over 50% of its volunteers during the first 6 months and continuously volunteering on a regular basis currently. -We are mentoring and advising the inaugural FIRST based curriculum at Central High School.

Team Captain/Student Representative that has double-checked this submission.

Zachary Guptill

Essay

FIRST Team 4944, The Hi Fives, reside in Grand Junction, CO. Also referred to as "The Grand Valley", our community of over 150,000 people continues to struggle with breaking the "boom and bust" nonrenewable resources cycle. Each cycle brings waves of temporary jobs into the valley. A few years later, those same jobs are relocated to another state. Meanwhile, stable manufacturing, engineering, & computer science jobs are few and the desire for these industries to call our community home remains low. In order for industries to take root and be sustainable, we need to educate and prepare future generations for these STEM jobs. The Hi Fives support this endeavor by inspiring interest, providing opportunity to get involved and opening pathways to STEM jobs.

This year we celebrate our 5 year anniversary! Five years ago, we began changing our community's view of STEM through the formation of FRC Team 4944. Our name, "The Hi Fives", represents the five high schools our founding members were attending in Mesa County at the time. The Hi Fives continue to be the first and only FRC team in the Grand Valley. We are supported by our friends, family, sponsors, and the community. We are proud to share our accomplishments, and also the relationships that we have built within our community with businesses, schools, mentors and friends.

Under the nonprofit charter of the Riverside Educational Center, The Hi Fives created excitement and passion for STEM by promoting all levels of FIRST at year round events throughout the community. The community embraced The Hi Fives and people of all ages were captivated by the opportunities provided by FIRST Robotics for their sons, daughters and friends. During our first year, we won two Rookie All Star Awards as a result of our extensive community outreach efforts.

In 2014, as a result of our rapid growth during our rookie year, our team transformed into an IRS nonprofit 501 (c) (3) organization. We also established a cooperative relationship with the Western Colorado Business Incubator, who donated 1,000 square feet of workshop and meeting space to us for our homebase. Hi Fives students and mentors were also instrumental in founding the first MakerSpace in Western Colorado. The Hi Fives students and mentors have volunteered hundreds of hours assisting innovators in our community in a creative, collaborative, and non-profit work environment at the GJMakerSpace. The Hi Fives have also taught workshops about CAD, 3D printer use, microcontrollers, and Arduinos to all ages in our community. Our students and mentors made up over half of GJMakerSpace's volunteer base during its first six months of operation and The Hi Fives continue to be an active part of its volunteer community. In the Fall of 2014, The Hi Fives helped to start 8 FLL teams and we also mentored 15 of the 19 FLL teams throughout the Grand Valley.

As a result of the incredible FLL growth, The Hi Fives hosted the first Annual Grand Junction FLL Qualifier in 2015 (Within two years of the first FLL Team formation In Grand Junction). We have hosted this event now for three years and will continue to inspire hundreds more students, parents, teachers, and our community in the years to come. Over 50 Hi Fives team members (mentors & students) volunteer hundreds of hours to ensure its success every year. The Hi Fives have also partnered with Western Colorado Community College for the last three years in order to engage in co-teaching summer camps which include: Arduino robotics, 3D printer assembly, JAVA programming, and LEGO robotics.

In 2015, The Hi Fives also founded and mentored the first FTC team in the Grand Valley. They provided guidance to Team 10223, Team AIR, which was located at the original home of the Hi Fives, the Riverside Educational Center, thereby literally bringing the team back home to its roots.

In 2016, two Hi Fivers initiated the effort to grow Jr. FLL in our community, resulting in the formation of 14 new teams in one year. Four teams were formed and mentored by Hi Fives members. This rapid growth resulted in our team hosting two Jr. FLL Expos for the 2016-2017 season. The Hi Fives also provided training for coaches and two interest and training meetings for prospective teams. These efforts continue to be organized and led by Hi Fives students throughout the year.

The 2017 season was full of firsts again for The Hi Fives. Participation at the FIRST FLL Qualifier was on a first come first serve basis due to the multitude of teams wanting to participate. The Hi Fives Board of Directors transformed to become Grand Valley Robotics and they are discussing the need to start an additional qualifier or increase the size of our current qualifier in order to include every team that wants to participate in FLL. In Conjunction with FLL, we also continued to experience Jr. FLL growth this season with over 20 teams participating in the Winter Expo.

In the 2017 season, our team attended World Championships in Houston, TX after we were awarded the Regional Chairman's Award at the FRC Utah Regional. This was a huge accomplishment for our team and it inspired us to set our community outreach goals even higher. In Fall of 2017, three Hi Fives students helped start and mentor the first high school based FTC team (Team 12891) and robotics class at Central High School (CHS). Additionally, students who take the class receive credit towards graduation and students can now letter in STEM. CHS has also designated a space in the technology building for robotics.

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Our team continues to increase in size, currently 25 students and 18 mentors, due to the relationships that we have developed in the community through our year-round outreach and joint activities with FTC, FLL, & Jr. FLL. Our relationships extend outside of our community as well. This season, The Hi Fives stepped up to help support FIRST Team 1332, who were struggling financially and had experienced a loss of Mentor leadership. The Hi Fives provided financial and mentor assistance to help support their upcoming 2018 season. Team 1332 is the only other FRC team in Western Colorado, and it is our mission to grow AND maintain FIRST in Western Colorado.

Hi Fives alumni are confident and knowledgeable citizens when they enter into college and leave the boundaries of the Grand Valley. Of our 21 alumni, 90% have pursued a STEM field job directly or are enrolled in a STEM course of study in college pursuing neuroscience, mechanical engineering, computer science, and optical engineering. The 10% of our alumni that have not gone into a STEM field have all pursued a higher education with the skills they acquired from the Hi Fives. Our alumni are attending schools such as Harvard, CalPoly, Harvey Mudd, Brigham Young University, University of Rochester, Colorado Mesa University and University of Colorado Boulder. Six alumni continue to be active FIRST Volunteers. They are mentoring inner city FLL teams and volunteering at FLL, FTC and FRC qualifying events.

The Hi Fives are a student led team. Students do 80% of the work and our Mentors provide the additional 20% of knowledge and skills needed to achieve the goals set by the team. This 80:20 ratio allows our students to see how their efforts affect the community in real time. In managing our finances, emails and community outreach events they successfully see the countless community members we have reached and the support our community has for our team. Participation with the Hi Fives brings opportunities to learn and access to life changing activities outside of FIRST such as competing in the DARPA Robotics Challenge with Team Grit and traveling to China with CU Boulder's VEX Robotics team. Hi Fives are encouraged to become Mentors and are welcomed back year after year as they are able.

When competition season ends, our team does not stop working. We promote the message and spirit of FIRST to people of all ages and backgrounds by performing year-round demonstrations to a wide variety of audiences. We reach thousands of community members including: nursing homes, elementary schools, summer extended-hours programs, business open houses, parades, farmer's markets, public library events, middle schools, high schools, MESA (Math, Engineering, Science, Achievement) clubs and awareness walks. Grand Valley schools, businesses and organizations embrace the message of FIRST and are proud to host The Hi Fives at their events.

The Hi Fives are so much more than a robot, we are a team striving to be competitive on the world stage by inspiring our community and challenging our limits.