

FIRST Impact Award - Team 1986

2023 - Team 1986
Team Number
1986
Team Nickname
Team Titanium
Team Location
Lees Summit, MO - 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.
FIRST has directly impacted Team Titanium through introducing STEM to our members. FIRST has influenced Titanium members since they were young; 56.5% of our team have either gone to a FIRST summer camp, a STEM fair that titanium hosts, or participated in FLL or FTC. Titanium has a 100% graduation rate with everyone wanting to pursue higher education. 91.3% of our team wants to work a career in STEM, and 87% are willing to come back and mentor our team or volunteer at a FIRST event.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Team Titanium supports Hope House, a non-profit organization that assists women who have survived domestic abuse or poverty. Every year the R7 Alliance brings in hundreds of dollars, worth of goods, for this organization. Giving to our community is a part of our mission; we hosted "Robots Night In" to introduce young kids to robotics, and take the stress off of local parents. Through supporting our community they have given their support back and helped us secure a new shop space at our school.
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?
Team Titanium believes strongly in the STEM pipeline. We help kids grow up in FIRST by mentoring them in FLL, FIRST Discovery, and in our summer camps. We hold "Scratch" and "WeDo" lego summer camps for elementary and middle school children. FIRST Discovery is something we integrated this year where we teach STEM lessons to special education pre-k classrooms. These outreach opportunities ensure students will grow up in STEM. We measure these successes by the growth we see in the team each year.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
If you venture to a FIRST event in Kansas City, you'll encounter Titanium team members and alumni. We volunteer at local FIRST competitions such as the Greater KC Regional, as well as local FLL/FTC

tournaments. We also mentor pre-k kids using FLL Discovery to give them STEM role models and start them off to be future leaders. Within our team, we host a “Hungry Hippos” competition to give our juniors and seniors a chance to test their leadership skills before the kickoff of the FRC season.

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

Team Titanium helps with the Timberbots FLL team, during our competition season. We help set up and referee at the local FTC meets. We also started a new initiative this year to mentor and help young students with learning disabilities; we teach hour-long STEM lessons using FLL Discovery. We also host summer camps teaching rookie FLL material. This makes us all excited to continue to spread pride for FIRST and to make new teams to continue Titanium’s legacy.

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?

Team Titanium prioritizes learning with WeDo and Scratch summer camps, and “Robots Night In” which are led by our passionate team leaders. As a team, we also organize Burgers, Beakers, and Bots, an annual event where we allow enthusiastic kids and their parents to explore our school loaded with various science demonstrations/experiments. 56.5% of previous members come from Titanium outreach events. These activities help create valuable future STEM employees.

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

Team Titanium has managed to create a close bond with Team Driven and Broncobots. As well as having an interconnected team network, our team has partnerships with local Lee’s Summit businesses. With these local businesses, our team hosts fundraisers which create an influx of customers for the business, and a raised profit for Team Titanium. With the R-7 alliance, we hold an open house for our community to view what we have accomplished each season and host a week-zero event.

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

Equity, diversity, and inclusion are the top priorities of Team Titanium. We are one of the most diverse clubs at our high school and continue to further the inclusivity of our team. To maintain our goal we have recently partnered with the LGBTQ+ of FIRST, which was widely supported by our team. Our team does not have an application process or cost, meaning anyone can join our team and participate in a knowledge-enriching environment.

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

Titanium starts with visiting the middle school and explaining FIRST; once they are in high school we talk to them about Titanium at club rush. A preseason tournament, Cowtown, gets younger students immediately drawn to the competition. Next, is four years of wearing green and cheering on your robot, followed by returning to mentor or volunteer as an adult. Titanium’s students have been making an effort to recruit more members, thus creating a cycle that ensures our longevity.

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

We as a team rely on our sponsorships and are extremely grateful for each one. We pride ourselves on creating and maintaining each of these partnerships. Our longest sponsor, Billy Goat, has allowed us to get materials powder coated while we represent their iconic green color. Team Titanium writes to each of our sponsors asking for their support while we represent their logo on our robot. We send out updates on how our season goes and a thank you note signed by each of our members.

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

COVID-19 put a lot of things on hold for Team Titanium, but this year we started to get back to normal. The R7 alliance used to do a potluck to allow for each team to get to know each other during build season, and that was reimplemented this year. We also implemented "Hungry Hippos" which helped the team get to know each other better. Our goal this year is to become a more close-knit family within the R7 teams.

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

Our team has had 466 students be introduced to FIRST through our team and our outreach events in the past three years. We prepare students with skills needed to succeed in the future like leadership and communication skills, aligning with FIRST values. Our motto is "Engineering Engineers" and Titanium strongly believes that we have successfully lived up to this statement through FIRST.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

Team Titanium is not just a family, we work to continue engineering skills. This is shown in "Hungry Hippos", a preseason inter-team competition to teach members about electrical, mechanical, and programming skills before the season kicks into gear. We have seen this work firsthand with our team members they are more engaged and excited for the season than ever before. Our older team members have grown in confidence with leading our team, and are prepared to be captains in future seasons.

Essay

Our Processes Team Titanium makes our robots by following the engineering process or, in other words, "Engineering Engineers". The way we inspire others to be interested in STEM, build our team, and prepare students for the future is also like the engineering process which follows the steps of generating

concepts, prototyping, and polishing the final product. Through our team's outreach initiatives, we are getting children invested in STEM and this program in turn involves them in the FIRST community. This is our generating concept phase, which leads to the prototype phase. Titanium's prototyping phase is how we implement our strong team structure. This is where we teach students leadership and practical skills by being on Titanium. The final step of the engineering process is the final product represented by the strong leaders of Titanium. The engineering process is how Team Titanium achieves success through each season.

Generating Concepts "Inspiring the STEM future" One of the most vital steps in the engineering process is generating concepts and ideas. Generating concepts to us is getting children interested in the world of STEM, a task we know can change the lives of younger students because we were once the same and remember that impact. Recently, our team applied for and won a district-wide grant to volunteer at a local early childhood center and introduce the FLL Discovery program. This grant has allowed us to bring STEM lessons like energy, to fifteen four to five-year-old special education students. Another way we introduce children to STEM and FIRST is through our annual Burgers, Beakers, and Bots science carnival, reaching 137 elementary students. This event is completely run by our team members for elementary-aged children. Each member has a STEM principle like electricity, buoyancy, or even chemistry, and a fun experiment or task to demonstrate that STEM is fun. Team Titanium also runs a variety of member-led summer camps for our community which teach over 120 students. Our WeDo Lego camp introduces robotics and simple programming through Legos to kindergarteners, and our Scratch programming camp is for older elementary students to teach more advanced concepts. Our most advanced camp is Rookie FLL, where students learn the foundations of FIRST. Another favorite outreach night of ours is called "Robot's Night In, Parent's Night Out", a night off for parents and a night of STEM engagement and fun for around 45 elementary students. Our favorite method of generating concepts is through mentoring the two FLL teams of fourteen students from Trailridge Elementary. We volunteer with these students so much because, since Trailridge that feeds into Lee's Summit West HS, a lot of current members began FIRST on that same team. Members mentor these fourth and fifth graders once a week and cheer them on at competitions. Regarding middle school, we presented Team Titanium during "Girls in Engineering Day" at Summit Technology Academy. This day is dedicated to getting seventh-grade girls excited about STEM and their opportunities at a higher level. We attend an eighth-grade parent night where we introduce what FIRST Robotics is, to get our future students informed about Team Titanium. As a team, we go visit middle schools that funnel into our team, and we talk about our team message and previous accomplishments. Implementing these ideas and getting children to generate concepts of STEM is how we share the mission of FIRST, with this, we are inspiring the STEM future. Team Titanium believes that this is the most vital step in the development of our team and future.

Prototyping "Impact on the FIRST community" In a prototyping process, the goal is to work out the kinks and make sure the final product is something worthy of showing off. Each year, the offseason is our prototyping process; we work out the kinks and make sure we are a smooth-flowing and close team before the build season starts. This all begins during club rush, the freshman transition day event where students can meet all the clubs at our school. Our leadership introduces FIRST and what robotics is to students and parents alike, increasing our chances of gaining members. We follow these recruitment events with a float in the school's homecoming parade, to give students an early opportunity to be involved in the creation of a new and fun team culture. Our team has taken on the mantle of becoming an LGBTQ+ of FIRST representative. Through this program, we are the bronze representatives at events to show that the entirety of FIRST is an inclusive and welcoming group to confide in. Holding this chair furthers new, and old, members of the team to feel welcome and included along with helping others find

a supportive community within FIRST. This year, in the hopes of reducing this stressful, beginning of the year stage, we implemented a new Team Titanium program called "Hungry Hippos" where we divided our new members into two teams to design and build a robot. New members are given hands-on instruction about drive trains, motors, electrical components, CAD, programming, and more by upperclassmen who are training in newfound leadership techniques. This effort to prototype a strong team does not end at just our team. We work with the R-7 Alliance (1730 Team Driven and 1987 Broncobots) to create a larger local community. With all our shops located in the same alleyway, a strong bond has been formed, creating friendship and community with our other FRC teams. These close friendships are on display at our R-7 wide "potluck". With the aim of growing this community with the entire metro area, we are hosting a Week Zero competition for all area teams. Once March begins, the alliance wants to create the chance to celebrate our hard work, so we host a collective open house. The goal of this initiative is to show the community and invested members the progress of the robots from the build season. This also allows for inter-team bonding and the intellectual exchange of ideas. Friends and family come to the shop and members get to show off what machines they used, the robot they built, and the connections they formed. This phase of impacting the FIRST community is what shapes our students to be the best innovators they can be.

Final Product "Spreading the mission of FIRST" The final product means putting on the finishing touches. For a FIRST team like us, that means growing our impact beyond 1986 and into the larger community through community service. Our members actively volunteer at local businesses and charities, most actively at Wayside Waifs and with Hope House. At Wayside Waifs, an animal shelter, we lessen the weight on staff by socializing the animals and completing more menial tasks such as folding blankets. For Hope House, a women's shelter, we work alongside the R-7 alliance to donate goods for these survivors of abuse. Our Hope House drive is one of the most successful ways we give back to the community, bringing in hundreds of dollars worth of goods for this well-deserved shelter. At many local FIRST events, you will find a Team Titanium alumni, mentor, or coach volunteering and influencing future generations. This trend continues with our current members with almost 90% making the promise to come back and mentor after graduation. Through our process of engineering student engineers, we have created a desire to help others whether or not they are still obligated to the team. To polish it off, we will finally be getting our own shop space complete with a full-size practice field. Without the support of our community in the endeavor towards spreading the mission of FIRST, it would never have been approved by the school board, and for that we are grateful.

The Results We are a strong team and we make sure our team has the ability to grow. Without our brainstorming intended for the next generation of Team Titanium, there would be no continuation in the cycle of FIRST robotics. We know these goals succeeded because 56.5% of our current members participated in Team Titanium-hosted events as young students. As a result of our efforts to continue FIRST, Titanium impacted those outside of the FIRST community to find fulfillment in STEM. Our prototyping stage is what makes Team Titanium an exemplary team. We are known to hold the slogan, "engineering engineers", and this engineering process of building capable leaders and strong morale is exactly how we achieve our motto. Finally, in order to achieve the final product of our team, we focus on bettering our community. No team can call themselves a successful FIRST team unless they give as much to their community as they get from it, and we have focussed on doing just that. Through "engineering engineers", we have built up a reliable community and team to continue the message of FIRST. By doing so we have impacted individuals in STEM who focus on bettering themselves and our world ;

