

Chairman's Award - Team 6652

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2022 - Team 6652

Team Number

6652

Team Nickname

Tigres

Team Location

Monterrey, Nuevo León - Mexico

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.

Tigres' philosophy inspires youths, trains leaders & transcends to be a changemaker. All our alumni entered college (90% in STEM careers). 50% of our members are part of outreach projects. The 35% continue in FIRST programs as volunteers, mentors & judges. Our alumni are a role model in top companies spreading Core Values & others are sponsors of FIRST teams. We are paving the way to unique opportunities for internships & scholarships that result in the development of a personal career path.

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

6652 started in a 5x5m room, to be a team of >100 people, which is a partner of top tech companies. We disrupt educational models by introducing state-of-the-art STEM education based on FIRST, that allow us to start FLL, FTC, FRC in public schools, transforming the edu & tech model in our state. Another way to see how tigres approach opportunities our alumni are committed for unique opportunities to make a change, we developed projects that are recognized by Solar Impulse, UNESCO & Rotary.

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?

The ROAR, a successful & creative way to spread FIRST's message. Our yearly recruitment process registers 200+ students reaching 10+ schools, allowing us to develop initiatives inspired by FIRST like creating a new STEM lab at a high school, STEM camps alongside 5 countries, etc. Our yearly plan is based on results from the ROAR, measured by recognitions, goals reached, # alumni, # alliances & the inspired ones. All of this is recorded in our official documents, letting us be a sustainable team.

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

Due to our high number of entrepreneurs, we've created Projectthink & run the Festival del Emprendedor Social in order to raise awareness of the projects we host, find stakeholders to reach goals & teach the sustainable model we have developed (TPD). Additionally, our members have served as mentors & volunteers in official FIRST events & in 15 teams of all FIRST categories, such as 7577, 7740 & 8776, also assisted at Champs other teams that didn't speak English such as 7161 & 7653.

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

We've run a total of 60 events in 3 seasons, allowing us to embody the FIRST mission. Alongside 3158 & 4400 we hosted Hablemos de FRC at home, an event that provides resources of the incoming FIRST seasons w/ an attendance of 16 teams. Also we joined forces w/ 4400 to start FIRST Seed, a team opening project to expand the global FIRST community through manuals & resources, as a result, we've opened 2 FLLE, 4 FLLC, 8 FTC & 1 FRC. As well, we bring all our robot resources available as OpenSource.

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?

Hosted 11 global STEM Seed camps to >1000 childrens. Constructed the first STEM RETRAK hub in Latam made from recyclable material for every boy & girl, reaching >1200 people in an unserved community. Innovated an integral program that complements physical therapy for more than 30M people with musculoskeletal disorders. Through our 8 outreach programs & events we spread our ROAR to >7300 youths. Season by season more than 100 people join the Tigres specialized trainings in different areas.

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

Tigres has developed strategic alliances: Grainger, Bendix, Softtek, Whirlpool & UANL by ensuring mutual goals w/2 action lines. -Orgs: We connect them w/STEM fact, i.e. Edu models based on FIRST programs at Softtek reaching +1000 kids on +20 global events; -FRC Teams: To raise the creation of outreach projects, we hosted "Emprendiendo Ideas" w/3794, 4400, 6832 to promote project management, assisting +20 FRC LATAM teams; alliance w/7577 to develop a STEM lab to improve educational opportunities.

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

We created FIRSTxHER to educate members on FIRST ED&I training, social media & Tek is a Woman event: webinars for women by women in STEM. These initiatives have increased the number of minority members & attendees at events from 30%-45%. ED&I initiatives: SdV: helping people in socioemotional topics, Eduplay: opening an FLL w/autism participants, alliances to assist immigrants & neurodiversity children. In 2016 10% of our members were women, today we've ~40% women, making ED&I one of our goals.

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

To ensure team's sustainability & initiatives we transform our team members into changemakers. Yearly we mentor our rookie members to develop their hard & soft skills, so they create, continue & improve our team's projects & programs. We develop 6652 project method in which everyone reaches an effective way of creating projects, contributing to the 17SDG's. We provide them resources, funding & experience for 20 initiatives & they're allying with other FRC teams & ORG's to reach the next level.

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

Having a solid network is the key for a sustainable team. Recruit: developing innovative proposals for creating value through outreach projects & programs complementing their CSR plan. Retain: demonstrating monthly/annual results, involving them in our projects, activities & robot development ensuring continuous improvement. Engage: Working aside by hosting STEM global events: STEM Seed Camps, Tek is a Woman/Sustain it Up workshops; inviting them to official events, making them part of our ROAR.

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

Each season we overcomes diverse hurdles, however, we have an opportunity improvement that has been our biggest challenge: our robot performance. We established three KPI's. Experience: we involve and train our rookies to ensure our sustainability. Funding: we create alliances to invest in our robot development, giving us access to better components. Strategy: with the aim of mitigating variation in our designs, we developed our protocol TRD based on Six-Sigma, levelling up our engineering area.

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

Our commitment w/young people is clear: to generate changemakers who solve community's problems through STEAM. Due to this, we embrace the FIRST model by engaging motivated students, creating sizable and impactful programs that develop their skills during their journey at Tigres. As a result: >300 science and technology leaders, 30 entrepreneurs that are developing 15 projects and 4 startups. Even nowadays 4 of them are becoming our sponsors, emulated by not only our members but the world.

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.

Our members embody FIRST and take the skills they develop and get into the hero mask. Our project Theraplay, went to FIRST Global Innovation Challenge, making us the only Mexican team with this appointment. Some of our team members have benefited from "Jóvenes por el Mundo" global internship. Other members became team sponsors and furthermore play global roles in top companies. But after all, we can assure you that changing the world is not that hard, you just have to change one life at a time.

Essay

TIGREROBOTICS INITIATIVE

6 years ago the world was ruled by villains: a crisis in education, environment, inequity & lack of opportunities, but that all changed when the original avengers of 6652, TigreRobotics, arrived. The youth-led initiative was confronted by a question that opened their eyes, that changed their vision, the question that awakened the ROAR; What are you doing for Mexico?

There are many stories of heroes in the world & many heroes in our team. A hero is someone who gives his life for those he saves, who has the power to transform w/ his words & actions, who breaks down barriers & inspires his community. We are Tigres 6652, the heroes who are saving our community. Our mission is simple: connect STEM with our community, transform youth into the next gen of heroes, who embody STEM culture to the solution of problematics in their community.

TIGRES ASSEMBLED

Season by season we inspire youth to believe in heroic people within us & encourage them to get into the hero mask. Nowadays, we aren't just a robotics team anymore, we are the STEM reference for local & public high schools' students, having a roster composed by >100 students from >20 different public schools in Mexico.

To make this possible & to ensure our sustainability, we developed Tigres Operative Manual (TOM) sustaining our ideals, actions & operations as a team. This manual is based in our FIRST experience, where we established our organizational structure, including all our 5 areas, the path we use to recruit new members, our way to create long-lasting relationships w/ sponsors, ways to create & sustain all our outreach projects & programs as well as diverse protocols & rules.

FIRST breaks all the barriers of education, engaging young people to seek the opportunity of becoming heroes, here, Tigres comes into action. We gather inspired people into a 5-week mentor-based admission program through workshops, conferences developing their soft & hard skills during their journey through our 5 main areas; Communication, Administration, Engineering, Education & Social Entrepreneurship, aiming to transform every future member into a changemaker with a superhero suit.

As hero's sidekicks are greater than just partners, so are our sponsors, greater than just companies. We work with our alliances as one; FIRST introduces us into outreach activities & our sponsors support us with supplies, economical aid & assistance. Due to this, we connect them with STEM fact involving them in our outreach programs & projects, replicating this around the world spreading the FIRST message. As a result we transform them into our sidekicks.

TIGRES RISE

Tigres' hard work innovated a way to create an incubator of the next gen of heroes. Uncle Ben once said, "Great power comes with great responsibility", considering our circumstances we discovered that our community has many challenges that need to be met with intelligence & diligence.

We go beyond only addressing immediate solutions with immediate problems. As Mjölner doesn't give its power to Thor, it only channels it, Tigres Project Development (TPD) is the perfect tool for our ROAR initiative to channel our newly discovered heroes' power.

We found 6 Infinity Stones that give balance to our society:

FIRST Stone

As we are a student-led initiative, we acknowledge all barriers to staying lonely, that's why we pave the way creating FIRST Seed with FRC 4400, taking FIRST to seed the inspiration in youth into the STEM fields. This project provides anyone with complete manuals explaining how to open, register, mentor & sustain any type of FIRST team. In 1 year we've started 1 FRC, 7 FTC, 4 FLL & 3 FLL Jr. teams across Mexico & we are working on introducing this in other FRC teams to involve & develop FIRST in their communities.

Equity, Diversity & Inclusion Stone:

We recognize that talent is diverse. In our rookie year 10% of our members were women, due to this, today we promote gender equality creating Tek is a Woman collaborating with our main Sponsor Softtek, broadcasting webinars by women in STEM & Girls4Future, a SDG Rally reaching based on 2030 agenda >130 girls from LATAM/Europe, inspiring new gen of heroines to get into STEM. These initiatives increased the number of alumni at K12 events from 70%B/30%G to 55%B/45%G. Also we created "Intercambiando Sonrisas", a campaign that donates clothes & toys to those in need.

We've donated >8,000 items, reaching people in a vulnerable situation in our city.

Innovation Stone:

Every FIRST team has a lot of unique qualities, nonetheless, we believe that innovating is the key to sustainability. So we host & run Sustain It Up! a program alongside alliances like Techo AC & Food not Bombs. When we awareness & teach sustainability through online activities & conferences using the UN's 2030 agenda, alongside 3794, 4400, 6832 & 3158 we create Emprendiendo Ideas & FRC at HOME, supporting >20 FRC teams to develop sustainable outreach projects. They build synergy, learn discipline & when the time's right, they get into the mask & levelluping into superheros.

Education Stone

Education is the biggest key to change the world. Our alliance with Softtek innovates in k-12 education, creating a complementary education program, "STEM seed". Our summer camps model for K-12 students impacted >1000 kids around LATAM/Europe (CDMX in collaboration with team Appreciate 2468, MTY, AGS) through >6 camps. Softtek works with us to replicate our sustainability model in Colombia, recruiting team members as interns to succeed. Due to this, they've invested >80,000 USD in us.

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Environment Stone

Our community, Monterrey, is one of the most polluted cities in our continent. That's why we decided to offer innovative & local solutions for enormous problems.

We'd seen while growing various projects for recycling trash, with low rates of success primarily due to minimal technological implementation. That's why RETRAK was born, a project that not only recycles trash, but incorporates STEM fact to increase chances of success, by recycling trash into a STEM class for every boy & girl. We built the first STEM center made out of polyaluminum in Mexico, our recycled material. This comes from tetra brik (milk cartons). Today, thanks to our efforts & sponsors for this project, it is a reality. Inside, we teach classes with STEM curriculum for everyone, it's equipped by Softtek and Rotary International investing >106K USD. These actions place FIRST in a lacking STEM area & inspire other teams to emulate, reaching >300,000 people. Thanks to this project, Unesco recognized us as one of TOP 100 youths global green projects with distinction "Green Citizens".

Health Stone

Health transcends the intelligence and abilities of robotics and innovating projects, due to this we took an opportunity to contribute to maintaining community wellbeing. In Mariath's rookie year they suffered a musculoskeletal disorder (MSD), and wasn't able to have a complete rehabilitation, so we realized that just as Mariath, more than 30M of Mexicans live with an MSD too. Thinking about those lives we saw an opportunity, faced the challenge, and created an innovative solution based on the B2B2C Model: Theraplay, an integral program that complements physical therapy for patients, with Musculoskeletal disorders, specifically in the superior limbs, such as fractures, sprains, and 150 more, through fun and joy with two action lines: 1.- Picka-bot, our modular device that is used in MSD patients' therapies. 2.- TherAPPlay app, where patients get motivated through reminders, challenges, routines and simultaneously create community. We are Tigres 6652 and we are revolutionizing the way therapies are made.

Once reunited the 6 infinity stones, joining forces with our sidekicks we created our own Tigres's Agents, making alliances to achieve our goals.

To achieve efficient teamwork, we work together with multiple ORG'S, ie our main sponsors Softtek & Whirlpool, for both of them being the first real inversion in STEM, alongside them we develop, host and run outreach projects and events, also involving in our journey via workshops and mentoring. To both of them, Tigres arrival impacted exceeding expectations, so they assign annual budget to invest in FIRST programs, in Softtek case leading them to open a STEM area in their global citizen strategy creating their own innovation hub, in Whirlpool case, they opened us the doors to their company, contributing in the design and manufacturing of our robot. Simultaneously we work with the governance dependence Instituto de la Juventud running STEM workshops and events for every youth in our community.

We transform the traditional public highschool methodology embracing youth in STEM; inspiring our school operating system via UANL, DAE. They've given us their utmost confidence, we've opened 7 workspaces, hosted STEM engagement events on 14 of its highschools multiple times, they've given us the spaces to teach STEM, FLLC/E & FIRST. Thanks to this for the first time in our school legacy we made history so others could create their own student groups ie AiChe, Tigre Motors, SDG student hub, etc. Nowadays we work with all of them impacting our student community.

Beyond the mask

The reason why Spiderman is so popular is because we can all identify with him, and the reason why >1.7M people in our community claim to be part of the ROAR is because everyone can identify with our ROAR. One day our founder said "I can assure you that anyone who has lived the experience of being part of our team had the dream of changing the world when they were little. Time passed and those dreams were put on the back burner. But TigreRobotics showed us that a person is genuinely a world. He taught us that changing the world is not so difficult, you just have to change a life forever."

We are Tigres 6652, the avengers of our generation; giving you the opportunity to join us, to work side by side and together, prove that anyone can wear the hero mask.