

Chairman's Award - Team 6170

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2021 - Team 6170

Team Number

6170

Team Nickname

Tecmilenio Vitronik

Team Location

San Luis Potosí, San Luis Potosí - 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.

We have transformed from an assembled group of students into believers that each and every single one of us can make a change; from every action to every conversation. We are living-proof of how a simple robot can guide us into a self discovery journey - whether it's Fabian gaining the confidence to talk to new people or Aura discovering her passion for helping people or Ismael deciding that he wants to study electrical engineering, *FIRST* has given us something to believe in and love.

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

One big challenge is to retain students who have difficulty attending activities and FRC events due to socioeconomic difficulties. Parents from our PBC take turns carpooling members whose parents cannot take them to activities. Since early in the year, we set-up and plan a specific fund to help students who cannot afford to assist our Regional Event; those members will take extra turns during fundraising events during school hours to cover their team-related fees.

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?

With our projects we have had the opportunity to spread the message of *FIRST* through some of the biggest news sources in the country like Televisa, TV Azteca, El Pulso and El Universal by having TV segments, articles and even by being in the cover of the magazine Millennials. Through this exposure, we have sent the message of *FIRST* to a reach of 2,000,000 people around the nation.

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

We decided to tackle an unseen problem in our community, the well being of students. Through the implementation of our ideals of well-being, we partnered up with team 125, 1241, 1678, and 3132 to develop Hear For You. Later on, with the help of our contact Jamee, we managed to partner up with *FIRST* HQ to bring Quiet Rooms - a place where students, mentors and volunteers can destress during competition - to every FRC event worldwide, expanding the importance of well-being to every team.

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

We are part of First Help Now, a robotics call center where we cover 4 -three-hour shifts per week. Through the past 4 years, we spent 282 hours assisting teams from around the world through various aspects of *FIRST*; from assistance in pneumatics to Chairman's submissions, we have been the first and only team to provide assistance in spanish & english. In addition, we compile our own experience and the experience of other teams through our own resources with an audience of over 37,000.

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?

Through Soy Cientifico and Ciencia Con Propósito de Vida we have reached more than 3,800 children through workshops, conferences, programs and science fairs in different schools, rural communities, foster homes and civil associations. With Inspirando Inspiradores we not only reach out to students, but also educators in local schools to train to be able to make their students fall in love with STEM while also providing the tools (Legos, DIY projects) to do so.

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

Bosh, GM, Briko, Intelligent, Faurecia support our mission with funding, materials, tools, and mentorships. We partnered with teams from all around the world to bring out TCA and Hear For You. We started the campaign #SomosFIRST to spread positivity and well-being during the pandemic with the help of 10 teams. We partnered with a food bank to distribute food to 600 people in our community for 10 days. We partnered with Dr. Sonrisas to create the first *FIRST* team of cancer patients.

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 En Pro de La Equidad De Género to promote gender equality and eliminate the stigmatization of women in STEM, achieving an increase of 40% of female members on the team. Every team member is certified on Gender Equality by SLP Commission of Human Rights so every member is socially aware of the disparity of opportunities based on gender. We created an alliance with Epic Queen to be mentors on one programming challenge for women. One of our female integrants was a Dean's List Finalist.

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

1st-year students are required to participate in all activities to have knowledge outside their area of expertise. 2nd-year students are assigned as Captains and responsible for projects, mentorships, and activities in specific areas. 3rd-year students are assigned Mentor Jr. to guide captains and work closely with Team Mentors. This creates a sustainable cycle where knowledge and experience are not lost after seniors graduate. Our Parent Booster club ensures continual support to the students.

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

We make our sponsors believe in our mission of inspiring through STEM. We send out monthly flyers with updates on team activities. We make personal bonds with our sponsors by giving them testimonies of several team members on individual growth on character and leadership. In addition, we offer our help in company events. Our Parent Booster Club provides us with contacts of companies (usually where they work) that could potentially support the team.

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

Our organization during the build season is our biggest challenge every year. To prepare for such challenges we use various tools like Slack, Google Spreadsheets, and Onshape to ensure fast and easy collaboration between members. We use rigorous planning to meet important deadlines during the 6 week build season. We constantly use SWOT Analysis, Gantt Charts, SMART targets and other tools to find possible improvements.

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

Our goal since day one is to inspire our students and community to fall in love with STEM and to use it with purpose. In recent years we achieved a growth of 350%. 100% of our alumni have gone to college and 87% have decided to pursue a STEM-related career, in which two of our alumni have received the full-ride Gallagher Foundation Scholarship to study at the ITEMS in Monterrey. In addition, we've expanded our impact to marginalized sectors by creating the first *FIRST* team of cancer patients.

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 biggest achievement yet is to have a group of students as dedicated and emphatic as the ones we have. For us, *FIRST* has never been about kids building robots, but rather about kids building character, confidence, and empathy towards those around them. Our students not only go on to study careers in STEM, but they go on to do it with a

purpose. Not just engineers and scientists, but also people with eagerness to make their community a better place and help those less fortunate than them.

Essay

The least important thing in our team are robots.

After 6 years we managed to make a mark in our community, after six years of seeing around 10,000 smiles that we have impacted from a girl in the rural community La Pila who has never seen a robot to a child cancer patient with the dream of going to the moon, we have seen how our actions can change the future of many.

It all started in 2015 with a 12-member rookie team in San Luis Potosí, with the dream of changing lives in our community through the mission of First. Our start was difficult but it gave us our spirit of persistence that has accompanied us for 6 seasons.

In recent years we achieved a growth of 350%. In 2018 with 41 members in the team, an increase to 420% in 2019 with 49 members. 2020 was a difficult year to recruit rookies due to the total closure of face-to-face activities in our community, so by designing activities through digital platforms we achieved a 250% increase in members since our first year.

The lockdowns due to COVID-19 has complicated the lives of many in our community and team, so we decided to create Todos Contra el Covid where we seek to support the sectors most affected by the pandemic through innovation. We delivered 100 faceshields to COVID hospitals in San Luis Potosí and 50 face shields with 300 face-masks were delivered to Farma-Medic in a small community in Guanajuato. In collaboration with VOLTEC ROBOTICS 6647, we delivered 100 faceshields in Monterrey. We also support 10 small businesses, each with an average of 5 employees, with dissemination and advice to adapt to the digital world, supporting the continuity of more than 50 jobs. We partnered with the Food Bank of San Luis Potosí, where we helped get 2 new sponsors and we created Ayudar Es Vivir, a food donation campaign with which we feed 600 people for 10 days.

For the past 3 years, we have noticed how the season and its rhythm of work affect the well-being of the members at FRC, so we designed a wellness ecosystem and a captain assigned to the area, improving the FIRST experience for our members. However, the current pandemic led us to a drop in recent performance compared to our previous years, members left, stressed and some even had anxiety attacks, as a solution we adapted sessions and activities with TecMilenio psychologists with which we achieved a 320% increase in team performance, 65% raised their grades, stress dropped 78% and anxiety attacks decreased.

We realized that all FRC members face the same challenges, so our mission was to expand our wellness system, so we decided to collaborate with teams 125, 3132, 1241, and 1678 to develop the Hear For You project in the that we disseminate tips for mental health through networks and we design the way to make the FIRST experience more enjoyable with Quiet Rooms, a safe place with activities done to reduce stress and rest. We designed the guides for its implementation and partnered with First HQ in late 2018. We achieved 53 FRC regionals with Quiet Rooms in the 2019 season and in 2020 all events had Quiet Rooms; thus, impacting the entire FRC community.

Five years ago we started Inspirando Inspiradores, with the mission to inspire both students and educators through science and technology. Because we know that there is no person who has more influence on young people than an educator, we ally ourselves with teachers or important figures for young people to bring them closer to STEM. We have impacted 6,000 students with a total of visits to 49 schools, rural communities, companies like HEB and associations like AMANC that support children with cancer. We have expanded the spirit of FIRST to 3,230 students with school events. JUNTOS, a non-profit association that dignifies the lives of people with different capacities, accompanied us in an Olympiad dedicated to inclusion where 38 people with different capacities and 50 volunteers provided by TecMilenio accompanied us. At VTECH, our robotics camp, we've had 110 children participate and 19% have joined our team. Apart from this, we had demonstrations in museums and cultural events in our state where we impacted more than 6000 people. To end our 2019, we participated in cultural events in collaboration with Yo Amo San Luis, the most important company for the dissemination of culture and tourism in San Luis Potosí. We shared the Christmas spirit with our community by giving gifts, sweets and accessories to 3,000 people in our community.

In 2020 our task was to innovate, to continue our path of Inspiring Inspirers despite the contingency. We joined 10 teams and started the #SomosFIRST campaign, where we remind the first community that to face the most difficult challenge we have ever had, it is necessary to stick together. We provided mentoring to Imperium Fons 6605 to get sponsorships and do social projects during the pandemic and we made animations to explain to children how to protect themselves from Covid-19. We began our 2021 with sessions in which we opened the horizons to 40 telesecundaria children in the rural community of San Marcos through didactic sessions with engineers and professionals in STEM.

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Ciencia Con Propósito De Vida began when we gave 6 cancer patients the dream of visiting the moon, from that moment we worked to give children and young people in difficult situations a future through science and technology. In 2019 we took FLL Explore to 180 children from vulnerable groups belonging to foster homes, boarding schools and rural schools. We started two FLL EXPLORE teams; one in 2018 called ROBOSONRISAS 19022, where we were able to give 6 child cancer patients a purpose to continue living in collaboration with the association DR SONRISAS, with which we received the rising stars award and through television, social networks and radio we had a reach of 2 million people impacted. The second, Mini Vitronik 2055, made up of the next members of Vitronik 6170 started in 2019. In the PlayMakers challenge we transformed the sessions to digital to include children from rural communities near San Luis, reaching a 90% of female participants.

We collaborated with the Scouts to create one of the most transcendental projects of Vitronik, Soy Científico, a camp with educational activities in which 12 boys and 26 girls from the rural community of La Pila had an approach to STEM. During 8 weeks there were workshops given by 8 different researchers / professors in nanotechnology, chemistry, mechanical engineering, civil engineering, mathematics, robotics and informatics.

An ITESM investigation showed that only 18.6% of women choose a STEM career in Mexico, that is why we created En Pro De La Equidad De Género. To understand the importance of working for gender equality, we returned a request from the team to take the gender equity course taught by the Our State's Commission of Human Rights. We partnered with Epic Queen where we are mentors in a programming competition for girls. Imelda, one of our most important members, was a finalist in the Dean's List award in 2019. We took STEM to 2 female boarding schools and we worked to eliminate the stereotype of women in STEM, thanks to this we achieved that 40% of our members are women.

In association with STEP, the most important ecological association in San Luis, we managed to be supported by the State Secretariat of Ecology and Environmental Management. We collected 8,640 batteries, 9,000 cigarette butts and 16,000 plastic caps; Together with TecMilenio, we cleaned 2 protected natural areas in our town, we gave lectures to 200 people about caring for the environment and in the 2021 season we did Salvando desde Casa, a project where we collected materials such as pet, aluminum and paper from our homes.

We know that the mission of FIRST is to inspire young people through science and technology to become agents of change in the future, however, this impact has not been globalized for languages ??other than English, in our case the Spanish-speaking community. Thus, we decided to get involved in the project The Compass Alliance, in which we formed an alliance with teams around the world, in order to create a single line for all aspects of FIRST, from technical aspects of mechanical or electrical engineering to leadership and team sustainability. We are responsible for translating this website for the Spanish speaking community, over the past few years we have translated dozens of articles and video content. We have also shared our experience over the years at FIRST in resources called Pathways, we have 19 Pathways in English and Spanish, these pathways contain more than 100 detailed pages of all aspects of FIRST. We received around 37,000 page views and about 3 minutes per visit on the pathways. We partnered with FIRST to globalize our impact and we are now part of the FIRST resource repository, impacting the entire FIRST community.

Despite having helped FIRST with resources, we know that all doubts can never be clarified, so together with TCA we are part of FIRST HELP NOW, the 24/7 assistance center where we, accompanied by teams from all over the world, such as 3132 and 971, through the TCA page we meet to resolve doubts in all aspects of FIRST for all teams around the world, dividing 3-hour shifts so that the experience we provide is the best possible. So far we have completed 282 hours of assistance supporting teams to continue their FIRST Robotics Competition odyssey.

After six years we have managed to transcend as a team, we have helped our school and community, but most through our mission to inspire others we have created scientists, engineers and activists for the future. Vitronik has never been about kids building robots, but about kids building character, empathy, and a life purpose through STEM.