

Chairman's Award - Team 4735

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2021 - Team 4735

Team Number

4735

Team Nickname

Tecmilenio - Peñoles - DEROF - 4735

Team Location

Torreon, Coahuila - 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.

FIRST has always been present in our team members' formative experience and made a significant impact in their life decisions. Due to that, over the last three years, 100% of our students have graduated from high school and entered university, having 89% of them entering a STEM major. Furthermore, many of them remain active in the FIRST community, as 19 members have acted as FIRST event volunteers (regionals and FIRST Championship) and 14 alumni have stayed as DEROF mentors since 2018.

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

We're located in the Laguna Region, a community in northeast Mexico known for its industrial activity, mostly metallurgic, textile, and autoparts. Though it had suffered an economic decline in the last decade, its recent impulse comes as a great opportunity for DEROF members to engage. Having 89% of our alumni entering STEM majors, we strive to give engineers and scientists that help the upcoming industrial growth of the region through DEROF's STEM experience and interaction with sponsors.

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?

Through our Robotours, we have had the opportunity to share what FIRST is capable of doing to change lives to over 2400 people, having shown our robots at our city's Robotics Festival, Paseo Colon events (a major weekend event in one of Torreon's most important streets), and "Make It Loud" Fair. Furthermore, we engage in mass media as we host a weekly Spotify podcast reaching an audience of over 300 people, plus having multiple appearances in regional-broadcasted radio shows and newspapers.

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

DEROF is not only composed of team members, but leaders, athletes, artists, and most importantly: inspiring changemakers that become role models. 19 of our members have volunteered in FIRST and 14 partaken as mentors on the past 3 years. Moreover, members and alumni go on to become team leaders in extracurricular activities such as Spirit (school engagement), Enactus (social entrepreneurship), and Debate teams. Alumni go on to get college scholarships in 4 of the best universities in Mexico.

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

Through our JUMPSTART program, we have developed a methodology that supports an effective engagement of *FIRST* to several stakeholders: we have opened 6 FLL teams along 7 schools with whom we've also worked in the inclusion of STEM in their curriculum; mentored 28 campuses of the Tecmilenio High School system nationally through coach training and organizational development consulting; lastly, assisted Rookie teams through conferences and hosting a "build your chassis" session at Kickoff events.

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 our "STEM Workshops" program, we have sought to make robotics accessible both to our school and local communities. Academically, we manage the curriculum for our high school's Technology & Leadership Course, from which 46% of students decide to later enter our team. This same course has been given to the Colegio Toledo middle school, NEXUS Training Center, and Centros de Integracion Juvenil (a national non-profit for youth drug rehabilitation and prevention centers).

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

We believe in generating strategic partnerships with our stakeholders. This has led us to create strong ties with other teams, such as the Mexican Wave alliance with teams 6832 and 7740. We have also partnered with the Destapa Una Esperanza association to donate 100,000 plastic caps to support funding for children's chemotherapies. Moreover, we are partnering with the rural community of Ejido El Hormiguero to develop our Villas STEM program, focused in improving their overall life quality.

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

We are firmly convinced that STEM education should be reachable for everyone, thus our focus towards EDI initiatives such as STEM in Pink, dedicated to encouraging girls into robotics through informative booths in public city events and special workshops. Also, we have started a collaboration along Ver Contigo AC, a non-profit that supports the visually-impaired and blind community in our region, and with whom we are working to adapt our STEM workshops for teenagers through material in Braille.

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

Knowing the importance of keeping track of our programs, we have opted to follow the methodology employed by the Project Management Institute, a professional tool guided by our coaches, through which we can document, report, and follow a structured planification of our activities with SMART goals and timelines. Likewise, projects are settled to be managed by rookie and veteran members, ensuring our rookie members are qualified to continue with the activities in following years.

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

We have been able to maintain a strong and cooperative relationship with our sponsors through strategies such as social project engagement: this includes our involvement in workshops for SIMSA (natural gas company) workers' children, efforts with Zurich (insurance) to work for girl participation in STEM, and Penoles' (metallurgic) *FIRST* Laguna community (as sponsor for other regional teams). Additionally, we have received mentoring support from personnel from sponsors like Penoles and Ditlag.

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

Active recruitment and rookie member engagement has been an opportunity area that the team has had for the last couple of years, as freshmen students did not have as much participation as veteran team members. For this, we have strengthened the Technology & Leadership Course's curriculum that could lead to more interested students. Also, we advocated for high school scholarships to be given to our FLL alumni for them to continue their studies at our school, thus progressing into FRC with DEROF.

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

The COVID-19 pandemic forced us to change our lifestyles, yet this has not stopped us from seeking to develop tomorrow's changemakers. For this reason, we have adapted our workplan to a virtual modality; this has been the case for our STEM Workshops at Tecmilenio, Colegio Toledo, Ver Contigo, as well as our JUMPSTART mentoring program. Also, additional to this current issue, we have used mass media, such as the Internet, to generate outreach, for which we started our own STEM-related podcast.

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.

Over the course of the years, DEROF has had noticeable presence in city-wide events and mass media. Amongst the events that we have participated in are the Torreon Robotics Festival held at our city's main hall, as well as Make It Loud Faire in the city of Gomez Palacio. Furthermore, the team has presented its work in local TV morning shows, appeared in major regional newspapers like Milenio and El Siglo de Torreon, as well as interviewed in radio stations like Imagen Radio.

Essay

Ever since its founding, DEROF has always been a team committed to the formation of young students capable of solving current world issues. For the last three years, we have learned several teachings that led to understand the importance of reinventing ourselves: expanding our horizons into new opportunities regardless the obstacles that could be in front of us. Especially with COVID-19 having drastically changed the way we see life, we now rather see an opportunity for improvement before the problem itself; strive for a better world.

Dare to Inspire

Elias, one of this season's rookie members, told us that, before entering the team, he had been going through a difficult period of time in his life, yet, one day he heard a LEGO robotics team from our community had participated in Australia, thus sparking an immediate interest towards experiencing such amazing opportunity. His mentality shifted into believing that, beyond competing in robotics competition, DEROF is a team where you can make your dreams come true if you work hard and with your heart. Two years later he is one of the freshmen students that has committed into inspiring other kids through FIRST the same way he was inspired that day.

Additional to Elias' story, DEROF's goal has always been to impulse the goals of every student to grow personally, academically, and professionally; to become a space for kids to find themselves and seed an impact in a foreseeable future where they can look back and reckon the experience they lived and the changemakers they have become. This has become a philosophy we decided to name "Fly Higher": one where you can challenge yourself to live to the best the teachings and opportunities you're given, but also seek beyond the box to make a greater impact to the world.

Knowing the importance for our members to "Fly Higher", in DEROF 4735 we deeply care of the experience that students have as members, having as a main objective for them to learn and practice the FIRST pillars in their daily life, especially after high school. These past three years we have had 28 members graduate and being accepted into undergraduate programs. Some of these students get scholarships in Mexico's top engineering universities (such as Tecnológico de Monterrey, Universidad Iberoamericana, Universidad de Monterrey, and Universidad Tecmilenio), as well as obtain opportunities at our campus' university through the DEROF Mentoring Scholarship.

Dare to Impact

One of our objectives is to create the leaders of tomorrow, true changemakers, yet in order for this to occur, one of the most important activities conveys our service to the community. This has led us to realize that, by working for our community, the FIRST message truly transcends robots, thus teaching us how to become better citizens and still promoting DEROF through a positive example for younger generations.

To fulfill this mission, we also realized that in order for our impact to blossom and generate a significant change, we would have to "Fly Higher" and create projects that could install a new way of living to those to whom we impact. One of those initiatives we have worked in is Villas STEM, a project dedicated to improve the life quality of nearby rural communities. Last year we started working the Ejido El Hormiguero community, from which we started going with food and toy drives for families and their children, and planning, after the quarantine, to support in the creation of a STEM curriculum and entrepreneurship courses to support their family economics.

Another program destined to this purpose has been our STEM Workshops. Knowing how fortunate we are to participate in a program like FRC, we believe it is important for other kids to learn and grow the same way we do regardless where they come from. One of the most important locations we had the opportunity to implement it is "Centros de Integración Juvenil" (Youth Integration Centers), a nationwide non-profit organization dedicated to support teenagers recovering from drug addiction or violent home environments. According to last year's data, 55% of young people in these programs have consumed heroin as young as 12 years old. As a responsibility to our community and peer young teenagers like us, getting them far away from dangerous habits, we partnered with the organization to impart our Technology & Leadership Course, the same that is taught and led by DEROF at our high school.

Today we are working for a new objective: to make STEM education even more accessible and inclusive to vulnerable communities. We are set to achieve this objective through a collaboration along Ver Contigo AC, a local non-profit that supports people with visual impairment. With them, we are developing a program that adapts our Technology & Leadership Course to Braille language (with audiobooklets included), as well as the development of a FIRST LEGO League team for the 2022 season.

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We are also working towards generating more opportunities for women to work in STEM fields, as we believe gender equality is one of the biggest goals we can work on. Along our sponsor Zurich (insurance company), we actively seek for initiatives that impulse this cause: through our program STEM in Pink, we have impacted the lives of girls in the Laguna region by setting special booths at our public appearances where we can give further information regarding girl participation in STEM, in addition to a basic programming workshop. Furthermore, we set the example by remaining a 1:1 gender ratio in our team, plus encouraging girls to enter our robotics programs both for FIRST LEGO League and FIRST Robotics Competition. Ely, one of our rookie members is clear example of this: her 2019 participation in our FLL team "Space Falcons" inspired her to love STEM workshops and open her vision of the world during their trip to the FLL Australia Invitational; "being in FIRST helped me to talk with more people and become more social, it has been a very valuable experience", she highlights.

Though many of these programs had to pause for a moment due to the COVID-19 pandemic restrictions that were set for on-site activities, we quickly sought to adapt our workplans in order for them to continue impacting our community. This has resulted effective, as currently all of our workshops, including that with Colegio Toledo middle school, Tecmilenio High School, and Ver Contigo AC are held through videochat tools.

Another strategy we have developed to reach our community remotely has been through our very own "Mas Alla de STEM" (Beyond STEM) podcast, available in Spotify. Over the course of two seasons we have made, over 300 have listened to our shows, having audience coming from Mexico, Colombia, Ecuador, United Kingdom, United States, and even Singapore! It is also to highlight that our main audience demographics come from ages 16-27 and 58% of our listeners are women. Through this podcast we have commented about several achievements in STEM in our current society, along with information about what FIRST is and the experience we have had during the years.

Dare to Engage

Something we have learned over the course of this pandemic, is that the FIRST mission must remain strong to our purpose, but most importantly, that as a global FIRST community we must remain together and helping each other. For the past three years our JUMPSTART program has had the goal of spreading the values of FIRST through its programs, both internally and externally. In the latter, we partner with local middle schools with the purpose of aiding them include robotics in their curriculum and open FIRST LEGO League teams; 6 teams have opened in collaboration with 7 schools have been result of this project in this period of time.

Not only that, but within the FIRST community, one of our pillars is to support other teams achieve and develop to their maximum potential, thus creating a program focused on a personalized consulting system that results in mentoring and assisting experiences. In the last five years, we have partaken in the impartation of programming and communication courses for the rest of the 24 teams located in the Laguna region. Moreover, in 2018 we were assigned as national mentors for the FRC community belonging to our high school network, comprised by teams in each of the 28 campuses nationwide; for this 2021 season we have mentored (through virtual communication tools) these teams through coach training and organizational development for team sustainability. Additionally, during the 2020 season we were invited to give a Rookie All-Star conference for teams at the Laguna Kickoff and hosted, along FRC team 6832, an event to support in the chassis building of rookie teams 8291 and 8411. Currently we also participate in the Ola Mexicana (Mexican Wave) alliance along teams 6832 and 7740, set to generate a cooperation network between teams and social projects with nationwide impact.

Dare to Fly Higher

Eternalism is a philosophical school of thought that believes past, present, and future coexist with each other, and this is perhaps the best way to describe who we are. DEROF is a team that learns from the past, lives the present, and prepares for the future. We are passionate for what we work for and always strive to effectively share our impact; breaking all barriers to build a "FIRST Class World" through STEM education. As we move forward towards the future, we reckon the foundations of our past, and thereby, live the STEM education experience by the FIRST values that inspire us to everyday "Fly Higher".