

Chairman's Award - Team 4735

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2022 - 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.

One of DEROF's main purposes is to have FIRST as a source for personal, academic, and professional development. Our DEROF-designed Technology and Leadership class at our school has pursued 52% of students to join the FRC team. 100% of our seniors have graduated high school and enrolled in university, with 90% entering a STEM career. Moreover, our impulse towards their continuity in FIRST has been such that 19 members have acted as FIRST event volunteers, and 15 alumni have remained as mentors.

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

The Laguna Region is an industrial-based area comprised of 21 municipalities. Having members from four of its main cities allows us to expand our outreach activities in our hometown and further in the Metropolitan Area. Likewise, our region's economic focus in metallurgic, textile, and auto industries incentivizes students to pursue STEM majors, thus seeking productive relationships to engage with local companies (sponsors) and expecting to contribute to our city's growth with future engineers.

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?

Our RoboTours have reached +5000 people through demonstrations in public spaces; features at mass media like television (Televisa Laguna), newspapers (Milenio Noticias, El Siglo de Torreon), radio (Imagen Radio), and magazines (Players of Life, Vive Tecmilenio, TEC Conecta) have allowed us to share nationally. We created our own broadcaster, Radio Television DEROF, to produce fun, informative, and relevant content in our social media channels and a Spotify podcast, reaching 310,068 people.

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

DEROFers are students committed to becoming positive role models to our school, FIRST, and local community. Most members are enrolled in scholarship programs, 4 members belong to the top 10 best grades, member Ely is a school ambassador, members Elias and Paris are student body leaders, and team captain Kendra partakes in international MUN events and national debate tournaments. 100% of our members participate in at least one social project, having 70% lead as mentors of our FLL teams.

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

Our DEROF LEGO program focuses on providing the *FIRST* experience to schools and members in vulnerable and underserved communities across the region. Through this, we have opened 9 FLL Challenge, 2 FLL Explore, and 1 FLL Discover teams. Through the Jumpstart program, we offer specialized FRC mentoring and grants guiding (obtaining \$58,000 USD for 13 teams), having worked with the 28 campuses of the Tecmilenio High School system (including directly opening FRC 8748) plus other 4 Mexican teams.

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?

Having been involved with 7 schools for our FLL program, we also helped them establish their own STEM curriculums. Internally, we designed and currently manage our school's Technology and Leadership Course. This course is replicated as STEM workshops at schools like Colegio Toledo and partner organizations like NEXUS Training Center, Centros de Integracion Juvenil (a national non-profit for youth drug rehabilitation and prevention), and USAER 62 (a federal program for gifted kids).

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 teamwork makes the dream work. Through partnerships, we have made the FLL program accessible to 81 kids from 8 schools, a community center, and Ver Contigo AC, an organization that works with the blind community in our region. Likewise, we have partnered with CAL, a center for Alzheimer's and Parkinson's elderly patients, to implement FLL Discover. Also, we work with four rural communities (ejidos) to implement our Villas STEM program, destined towards improving their 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.

In DEROF, striving towards offering equal and inclusive opportunities to engage in STEM is a priority. As part of these efforts, our team has a 1:1 gender ratio. Among our EDI initiatives, we include "STEM in Pink" to inform and encourage girls into STEM. Also, along with Ver Contigo AC, we learned Braille to implement our STEM workshops for blind kids, resulting in an FLL team. We're now developing an inclusive robotics kit, BotBox, to teach robotics while adapted for various disabilities.

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

Our team works closely with methodologies that aid us in doing proper planning, record, and ensure the sustainability of our initiatives. We employ Project Management Institute tools, guided by our expert coaches, and identify SMART goals to fit all work into our season plan. We've developed a detailed planning system to keep track of the preparation and resources needed. Also, projects are equally managed by rookie and veteran members, ensuring rookie members are qualified to continue them.

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

Knowing the importance of cooperative and transparent partnerships, we work along with our sponsors to create a bigger impact beyond their financial contributions. Examples include our main sponsor Penoles, with whom we opened FLL teams in their community center for kids in surrounding low-income neighborhoods. With SIMSA, we implemented our STEM workshop to their workers' kids. We've also worked with local companies like lumberyards, metal workshops, and hardware stores to obtain materials.

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

One area of opportunity we identified was member and mentor recruitment. However, by renovating our Technology & Leadership Course's curriculum, we have attracted interested students into the team and grew considerably. Through active engagement and solid team-building strategies, this growth has consolidated to become a DEROF family. Also, we've managed for our school to offer scholarships to FLL alumni to enter our high school and offer scholarships to alumni for them to continue as mentors.

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

DEROF's drive is to achieve a positive wellness ecosystem where STEM serves as a tool for peace, development, and growth to our community, the way *FIRST*'s purpose is. Nowadays, we represent the leading FLL initiative in our region to offer a better educational experience to kids in schools and vulnerable communities. All of our non-STEM-related projects are oriented towards building solid platforms for the development of our society, including outreach, ecology, infrastructure, and health.

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.

By invitation of our sponsor Penoles and our school, we partook in the COVID-19 federal vaccination campaigns as staff members, supporting in a total of 23 campaigns, accumulating 632 man-hours, and serving more than 60,000 people. We also translated the FLL song into Spanish ("Juntos Trabajando"), which was featured as the official anthem for the 2021 Mexican FLL Championship. Along with FRC 2283, we're organizing a book collection campaign in Mexican regionals to donate in rural communities.

Essay

Back in 2012, a group of young students initiated a journey towards a road full of knowledge, discovery, and fun through robotics. Today, 10 seasons later, DEROF 4735 is a team that aims to instill STEM education as a means for people and our community to grow to its full potential under one philosophy: to "Fly Higher"; a motto that represents the driving force from which members (students and mentors) strive to become world-class citizens and changemakers. As society recovers from the still ongoing COVID-19 pandemic, DEROF seeks to become a positive force for change and a source of inspiration to create a better world together; always looking forward into the future to generate new opportunities, help those who need it, and actively engage with stakeholders into a strong sense of community.

Dream Bigger

Among our team's objectives is to make STEM accessible for every person willing to learn from it. For the past three years, this has been the experience of 22 alumni who graduated from high school and enrolled in university. Not only do most of them register to engineering majors, but they have obtained scholarships at some of Mexico's top schools, including being able to get the DEROF Mentoring Scholarship at Universidad Tecmilenio to continue their FIRST life as mentors. These opportunities later become a motivation for first-year students who discover in FIRST a source to experiment with something different from that of a regular classroom experience. That is why, since 2020, we have been in charge of the curriculum and impartation of the Technology and Leadership (T&L) class at our high school, becoming a huge recruitment success as 52% of the enrolled students have become DEROF members. As generations move on, we hope this cycle keeps growing the number of seniors interested in pursuing STEM fields and continuing as mentors, increases our team roster, and attracts freshmen generations into FIRST. Furthermore, our T&L course is not the only way through which we make a positive impact in the school community, but also through our DEROF VIVE project, in which members involved in student body leadership roles organize activities that encourage wellness and happiness, especially with the return to in-person classes for the 360 students in our high school.

Yet this dream expands beyond our school community. Since one of our main objectives is to make STEM education accessible, inclusive, and equitable for all, we realized FIRST LEGO League suited the best to make a significant impact in schools and communities that had no access to opportunities in robotics. For the past five years, we've developed our DEROF LEGO program, reaching the lives of 81 students. By 2021, we had opened 6 teams with 7 schools, including having installed a STEM curriculum that is still implemented nowadays. This year we expanded into a new school, Colegio Excelsior, to open an FLL Challenge and an FLL Explore team (DEROF Excelsior). Similarly, after implementing a virtual science course for its community center, "CECOM", and impacting 33 kids from it, our main sponsor, Industrias Peñoles, supported us in opening FLL Challenge and Explore teams (DEROF Peñoles). It is relevant to mention the CECOM center is located in one of Torreon's most marginalized and polluted areas.

Additionally, for this season, we engaged in two groundbreaking FLL initiatives. We sought an opportunity to use FLL Discover materials to implement the program at the Centro de Alzheimer de la Laguna (CAL), a center destined for the care of elders with Alzheimer's and Parkinson's disease. According to CAL's Psychology Department, the program aids in reducing the detriment of the patients' psychomotor activity and encourages their cognition, thus becoming a fantastic recreational therapy activity for its 15 elders. Also, in late 2020 we partnered with Ver Contigo A.C., an organization focused on supporting the blind community in our region. After learning Braille, we adapted and implemented our T&L course and proceeded, with the support of Fundacion RobotiX, into opening the world's first inclusive FLL Challenge team for the visually impaired called "DEROF Contigo".

Having competed with these teams in 2022, not only do we continue working with them but are now growing the program by replicating this same strategy (T&L course, then FLL team) with USAER #61, a center that works under a federal after-school program for gifted students and Centros de Integración Juvenil A.C. (Youth Integration Centers), a national non-profit organization dedicated to supporting teenagers recovering from drug addiction or violent home environments. Concerning the latter, according to data from January 2022, 62.04% of the people they serve have consumed crystal meth as early as 12 years old, for which we hope our efforts to be a tool to remove youth from these dangerous habits. Additionally, we will also be working with two new schools with whom we'll first give a summer course, and by the beginning of the next school year in August, we'll start working on FLL teams.

Work Harder

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Another main objective in which we focus our efforts is to make FIRST and its Core Values reachable and universal. For this to be achieved, DEROF members, also called DEROFers, work with a passionate call for community service to carefully organize and execute projects that impact stakeholders within and outside the FIRST world. Regarding the former, aside from our DEROF LEGO program, we created our "Jumpstart: Inspired by DEROF" initiative. This project consists of a personalized, specialized consulting-based mentoring system through which we offer planned one-on-one training sessions with members and coaches from FRC teams, a 24/7 helpline for technical assistance, award submission guidance and translation services, and assistance in grant applications. To this day, we have mentored 32 teams, including being named "National Team Mentor" for the 28 campuses of the Tecmilenio high school system in 2018; and assisted 24 FRC teams in the region through courses and published resources we have shared as part of the FIRST Laguna community. Since the 2021 season, we have supported 13 teams in grant applications, through which otherwise they wouldn't have been able to participate in FIRST. These teams have obtained a total of \$58,000 USD. Additionally, via Jumpstart, we opened a team in the city of Durango, named DEROS 8748, which will debut in the Laguna Regional accompanied by us.

Yet, the impact of the FIRST philosophy goes beyond robotics. In our case, we strive to bring the message of FIRST through outreach opportunities in public events and media channels. Through our RoboTours project, we have presented our work at events like our city's Robotics Festival, Paseo Colon (a major weekend event in one of Torreon's most important streets), and "Make It Loud" Fair in Gomez Palacio, reaching over 5000 people. Nonetheless, in addition to mass media appearances and features, we decided to bolster the creativity of how we shared our team's work. We then decided to create "Radio Television DEROF", our own broadcaster and digital media platform through which we could produce original content, including shows like STEM in Pink, DEROF LEGO Show, and Keeping Up With DEROF for our social media accounts. In the past three years, we have reached an audience of 310,068 people on Facebook and Instagram. We also manage our very own Spotify podcast, "Mas Alla de STEM", which has gained over 700 plays across its four seasons and reached listeners in countries like the U.S., U.K., Germany, Argentina, Spain, and Singapore!

However, outreach is not only about sharing our work with others, but also applying the FIRST values in communities in need. Through Villas STEM, we aim to help increase the capacity building and quality of life of rural communities (ejidos) outside Torreon. For this, we focus on three pillars: education, family development, and health. We've worked with communities such as Ejido Transporte, Ejido La Torreña, Ejido El Hormiguero, and Ejido California delivering gifts to 900 kids for the past two years. Specifically in Ejido Transporte, a community of 1300 inhabitants, we will be working with the Secundaria Tecnica 49 (middle school) to train teachers to create math clubs and lead a reforestation campaign across three acres surrounding the school (DEROF Life). As for health matters, part of our DEROF Ekos program includes our "Brigadas de Bienestar" (Wellness Brigades) project, through which we bring medical and nutrition brigades to the community for free basic check-ups to their population.

Additional to the brigades, our DEROF Ekos program has included efforts concerning the COVID-19 pandemic. Since the beginning of the national vaccination campaign in June 2021, we were invited by our sponsor Industrias Penoles to partake in the campaigns volunteering as staff members (paperwork revisers, guides, general supporters) on the dates they would be holding vaccinations at their CECOM community center. We participated in 23 campaign dates, accumulating 632 man-hours, and serving over 60,000 citizens who went get their first, second, and booster shots. Furthermore, we also volunteered in the vaccination campaign held at our high school on January 11, 2022, where 1300 students partook in the process.

Fly Higher

DEROF 4735, over the years, has become more than just a group of dreamers who build robots, but a family where all members share the same passion for STEM education, community impact, and fun that FIRST offers. By constantly reinventing ourselves, motivating each other to pursue greater challenges, share our common goals, live the FIRST Core Values, and have a call to serve others, we ensure to accomplish DEROF's vision statement: "Dream Bigger, Work Harder, Fly Higher"! DEROFers are global changemakers willing to inspire through STEM and FIRST. You're invited to join this adventure. Will you fly with us?