

Chairman's Award - Team 6907

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2021 - Team 6907

Team Number

6907

Team Nickname

The G.O.A.T

Team Location

Shanghai, Shanghai - China

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.

With FRC, our students have been passionate about science and enhanced their skills in business, time management and public speaking. The teamwork experience also equips our members with prominent leadership among others. Additionally, valuable knowledge in STEM have been acquired, which strongly influence the members' future career. Those who choose to study abroad have successfully entered the top 50 universities in the USA. Some alumni have become FIRST volunteers after graduation.

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

We are affiliated to a well-known public high school in Shanghai. Using school resources and publicity, we have held over 30 FIRST and/or STEM related lectures and workshops in various other schools to promote FIRST Spirit. We've also hosted three FRC Christmas Luncheons, one FRC Shanghai Technical Conference and two Summer Gatherings, inviting FRCers in Shanghai to exchange techniques and cultivate team spirits and broaden their views.

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 very unique way of spreading the FIRST message is by throwing lectures and workshops in more than 40 schools in Shanghai, where we share what our students have learnt from FIRST. We also publish articles to share our progress in the seasonal robot, and have regular updates our translation JVN blogs, and tutorials on fundraising, programming, robot design, and video editing. With our effort, our account attracts more than 1600 followers and more people to join in FIRST.

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 gave about 30 lectures to raise public awareness of STEM education and introduced FIRST programs at local high schools. Our first female captain, Yuting Shen, one of the co-founders of 6907, continued in giving speeches and hosting events even after graduation, and she turned out to be an outstanding member of FIRST Shanghai Organization Committee. She started an livestreaming show for all Chinese teams. Also, we have passed our operating system on 6941, PingHe School.

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

Although 6907 has been established for only three years, we've done a lot of work. We provide resources like practice fields to build and the robot for teams who need them. Our team supported FRC teams 7002 and FTC teams 1367 in various areas. We have established close partnership with them. We share resources, guide them to overcome technical and financial difficulties, help them in engineering and mechanical design, and organize frequent events to exchange experience.

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?

As a five-star club of the school, our team cooperated with our school to build up a "STEM week" each semester for every student to attend courses on design, 3D Printing, coding, etc., taught by our head coach. We also hold workshops in elementary, middle and high schools where we discuss our design idea for the season and inspire students to come up with their own.

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

6907 has built close friendship with other organizations. During off seasons, we interviewed many teams including 6353, sharing ideas of engineering and team operations. 6907 members has kept close contact with our sponsors, showed them our achievements and attended events they held. We have hosted Christmas dinner for three years, inviting local teams and sponsors to exchange ideas and experience when participating the competition.

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

The male-female ratio of our team is approximately 1:1. Our 2021 student leadership team consists of 4 girls and 3 boys, the head engineer being a sophomore girl. Not only do we create workshops and special events for female members, but we try to send a message that you can be whoever you want to be here. Apart from that, we also have team members still in Middle School but has a passionate heart, students overseas and former members of disassembled FRC teams.

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

At 6907, sustainability long-term development of our team is top priority. Every year, we have a one-month workshop where we design courses on engineer, programming, media, business sense and sponsorship, to help newbies get a comprehensive idea of FRC. We also have intensive weekly workshop on engineering, robot design and coding in off season. The courses can be recorded so we never run out of training materials. Our alumni come back as mentors to help our coach and student leadership team.

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

6907 encourages everyone to find organizations and associations to be our potential sponsors. Successfully, we developed and maintained reciprocal relationships with our sponsors. During the off season, team members attend the events held by sponsors with our robot exhibited and visit their company. Our key is to retain close relationships with them is to constantly keep them updated. We basically informed our sponsors of what we did and how we used their money to improve ourselves regularly.

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

What our team needs to improve is to widely spread *FIRST* spirit. Since 6907 established in 2017, we have already run FRC lectures in more than 30 schools, enabling students to get closer to STEM and influencing them in the spirit of *FIRST*. We have once held the FRC Shanghai Sharing Forum, FRC Technical Exchange and Summer Dinner, inviting teams to exchange techniques and team spirits. However, for the endless road of spreading *FIRST* spirit, we still have a long way to go.

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

Our goal is to spread *FIRST* spirit to not only FRC participants but the communities as well. We promote *FIRST* messages through roadshows and presentations in schools and forums. We also run a WeChat public account which provides information about FRC, so that an increasing number of people of all ages have the chances to participate in STEM, meanwhile introducing them to the spirit of *FIRST*. We aim to pass *FIRST* on and make more people to reach it.

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.

We have published over 200 articles on FRC tutorials for beginners, game analysis of each season, translations of JVN blogs and series tutorials on fundraising (25 and counting), video editing, coding, etc. Now our WeChat official account has 1600+ followers, reaching a total reading quantity of 120k+ times. Besides, we are keen on taking FRC to other fields. 6907 organized FRC city run with related club, and will hold a charitable event jointly in the near future.

Essay

Since our establishment in 2017, team 6907 has grown from a small group of four to over 200 passionate members and alumni. With what we've got from FIRST, we contribute to FIRST, to our community and to our students.

GIVE BACK TO FIRST

We are trying our best to help develop FIRST community in China by holding plentiful events, workshops and publishing useful materials through social media.

Christmas Luncheon

In Dec 2020, 6907 hosted our third Christmas Luncheon after its success in 2018 and 2019. The luncheon was also known as "FRC Shanghai Sharing Forum", and was joined by over 100 students, alumni and mentors from 5 cities and 13 teams in 2020. Due to the pandemic, we limited our invitees to Shanghai teams and had a smaller gathering of 50 people this year. The gathering was meant for teams to bond offseason, serving as a great network opportunity for FIRST teams, students and alumni, as well as a platform for experienced FRCers to share their knowledge and offer advice.

Summer Gathering

Our network program did not stop here. In the summer of 2018 and 2019, we held a similar event where 5 local teams were invited to our working studio and each shared design ideas for their season robot. We discussed potential improvements on these robots together for the upcoming RCC offseason event.

FRC China Technical Conference

On Nov.24, 2019, we co-hosted the first FRC China Technical Conference. Students and mentors from more than 20 schools and STEM-based institutes from Shanghai, Jiangsu were invited to share experience in FIRST and STEM. Teams made technical exchanges like programming, robot design and 3D printing, as well as experience in team running.

Demonstrations and Slideshows

Established in 2017, 6907 has made demonstrations and slideshows to rookie teams and yet-to-be teams as veterans. In May 2019, three of our team members and a mentor flew to Shanxi, China. They introduced FIRST programs to local students to raise the low awareness of STEM education. We also helped to establish 7002, the only FRC team in Shanxi, providing tips on how to find sponsors and cost reduction, and gave them our sponsorship handbook for reference. We also shared our experience in engineering, programming and media, while members of 7002 also shared their experience with us. We kept in touch with them to help them through both technical and financial predicaments. We are always willing to help other teams and schools with their STEM education and propagate the FIRST spirit throughout China.

Social Media and Resources

We started our WeChat official account back in 2017. By far we've published 363 original articles, with a total reading quantity of more than 120k+ times and 1.6k+ followers. Unable to participate in offline activities, we came up with new ideas, publishing tutorials on our WeChat official account, to help FRCers blend into FIRST community.

Our students attended the courses on Coursera platform Fundraising and Development Foundations, watched the videos and summarized the content. 20 students each watched a video and wrote a summary about it, adding their own thoughts. We are still keeping updating it and we hope to form a complete curriculum system soon.

Meanwhile, we started a new article serial called FRC Game Introduction. We introduced the game rules of a certain season, dissected robot designs of outstanding teams in the season and analyzed their game strategies. As offline events were all suspended and were likely to remain so, we hoped this series could give our team members, especially newbies, more knowledge about robots and strategies. By now we've posted 13 articles, covering season from '16 to '20. We plan to keep updating it, introducing games in even earlier years.

What's more, we keep updating our old series. We have formed a translation squad of nearly 40 students to carefully translate interesting ideas on ChiefDelphi.com, JVN's Blog, WPILib, providing Chinese teams with valuable resources. In the meantime, our media sub-team frequently posts recent updates on our team and various tutorials, including a series of articles introducing all aspects of the FRC to newbies. During games and events, we print out copies of our sponsor handbooks and team handbooks to teams for their reference.

We also devote ourselves to sponsorship. To ensure sufficient funds, 6907 has built up a complete sponsorship system, providing us with enough funds to host all our events. During the epidemic, we started translating material on sponsorship from Coursera, and posted them as fundraising courses on our account. We summarized a series of methods on fundraising and applied it to practice. Also, we released a sponsorship handbook to assist other teams to properly solicit funds.

SPREAD STEM TO COMMUNITY

Fascinated by the beauty of STEM, we are eager to introduce it to our community.

Start small, we try to make STEM widely disseminated throughout the campus. Therefore, we cooperated with the City Orienteering Club, one of the most popular clubs on campus, and held an FRC city run. Students in teams completed several tasks related to FRC, like questions about basic scientific and technological knowledge. This neoteric way of introducing STEM left them a deep impression of STEM.

Then, we set a bigger goal of promoting STEM throughout the entire city. For the past two years, 6907 has made workshops in up to 30 primary and middle schools in Shanghai. By organizing activities like demonstrating LEGO Robotics and allowing students to actually operate them on their own, we hoped that students could experience and feel the joy of robotics. We provided not only introductions and instructions but practical suggestions on how to improve their STEM ability. Especially in November 2019, we held a resounding exhibition of STEM in Huangxing Park to introduce STEM to passers-by of all ages. We attracted a crowd including young kids with their parents, teenagers at the same age, and even elders. Witnessing people of totally different ages but brought together by STEM and robotics, we were confident and thrilled to claim that STEM was for everyone.

We will never remain stagnant. In the upcoming semester, we are planning to cooperate with the charity club in our school that initially connects with students in remote areas through letters, to share STEM with students even farther away.

EDUCATE OUR STUDENTS

We deem the sustainability and long-term development of our team as top priority. Every July, we have a one-month orientation workshop where we design courses on engineer, programming, media, business sense and sponsorship etc., to help new recruits get a comprehensive idea of how to run an FRC team. The orientation is followed by China off-season events to train our rookies. We also have workshop on engineering, robot design and coding during off season. Students are the decision maker. The team was run mainly by a leadership team of several students and one team coach, with mentors to assist and hand out professional advice. We invite senior students to come up with workshop project ideas and teach the workshops for new recruits. The team's social media, our community work, the passing down of FIRST Spirit and the team's spirit are also in the hands of our student members.

We make continuous effort to structure and manage our team in an effective manner. We do SWOT analysis and pay much attention to our weakest link. Team meet up every month on and off season to strike up a monthly schedule, and we carefully update our team handbook annually. We are confident that all these strategies will provide the team with a more sustainable future.

We hold gender equality as our firm belief. The male-female ratio of our team is approximately 1:1. Our student leadership team in season 2021 consists of 4 girls and 3 boys, the head engineer being a sophomore girl. Not only do we create workshops and special events for female members, but more importantly, the team inspires its members to stick to their infinite potential and true passion all along, ignoring the "gender gap" or other old-school stereotypes.

We work together with our school to establish a "STEM week" for every student in the school. The students experience a "STEM week" each semester, during which they learn about designing, crafting, 3D-printing, coding, etc., in courses taught by our team coach. Every year our team coach come up with new, innovative projects for "STEM week" with knowledge he learns from the season.

HOW FIRST INSPIRES US

The team and its members complement each other. Those who have made efforts to improve the team also benefit from the practical experience. Owing to the specific skills and FIRST spirit, which can only be acquired beyond the traditional school curriculum, graduated team members of 6907 are always highly competitive in the university application. They have been admitted to universities of the U.S top 50, China top 5, or the U.K G5 without exception.

Their efforts earned their much other additional credit. Our team founder and core alumna Yuting Shen who was enrolled by Fudan University would be the best example. Her contributions greatly influenced both team and her life path. She devoted almost all her spare time to establishing a sound operation system and became our first female captain. Apart from her diligent work in the team, she started some out-reaching projects with FIRST China committee, including lectures in schools, to disseminate the charm of the FIRST spirit. She was one of the two alumni who won the Best Alumni Award in RCC in 2019 and was invited by TEDx to give a talk on leadership skills. To put it in a nutshell, FIRST spirit inspires everyone to be a better one.

We're lucky to get to know FIRST and let more know. We're taking action to diffuse FIRST, together with the scientific spirit behind it, to more students, to the community and even to our country. We consider it as our very mission and we are going all out.