

Chairman's Award - Team 5515

Team Number

5515

Team Name, Corporate/University Sponsors

Novelis , Inc./Autodesk, Inc./Beijing Sineva Co., Ltd./iFlyTech Co., Ltd./Maisui Maker Space Co., Ltd./Jiangsu Josun Air Conditioner Co., Ltd./Turing Robot Co., Ltd./Roboterra, Inc./Blue Lemon Trade & Business Co., Ltd./Home Think Science & Technology Co., Ltd.&High School affiliated to Shanghai Jiao Tong University&China Urban Youth Robotic Alliance&Shenzhen DADALELE Culture Communication Co., LTD

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2016/2017 year and the preceding two to five years

One core lesson we've learnt is gracious professionalism. When various professional and social skills were gained in our own experiences, we developed areas of growth for our career lives. With these, by devoting ourselves into spreading STEM edu., we engaged with issues of global significance. We also cultivate a sense of cooperation. When getting closer to sci. and tech. more passionately and confidently together, competing with others, we realize that researching is an interactive process.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2016/2017 year and the preceding two to five years

An increasing number of students are participating in FIRST program these years, especially FRC. A Shanghai FRC Alliance with 9 teams was set up, associating students from different schools together. FIRST is currently playing a vital role in various STEM exhibitions and Shanghai became the host of CRC in 2016. More local social organizations (including Huawei, etc.) and engineers are aware of related events and STEM edu, and most of our team's parents get involved in the program with supports.

Team's innovative or creative method to spread the *FIRST* message

We set up our own Wechat and Facebook Official Account, and website for immediate FIRST message updates. These include some intros., instant info., experience share tweets and animations, with a page view of 9037 and hundreds of followers in total. Also we reached out to 15426 people in social media news and to above 170000 families across China through a national news program. Our presence in some robot street shows and expos including TEGAJoy and 2015 SSTE made our promotion even stronger.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

We regularly spread our passion towards robotics in FRC China groups by being active to share our experience and answer any questions. With the hope that some day more teams will inspire others just like us inspired them, this year we set up Shanghai FRC Alliance, went into their campuses and conducted gathers to deliver more demonstration. We made speeches to talk about how we organize outreaches, design robots and sustain sponsorships so that they can learn the diversity of FIRST.

Describe the team's initiatives to help start or form other FRC teams

We regularly call on others to join us by updating our Wechat Official Account. This year, with the supports of our sponsors, especially Dadalele Co.Ltd, we're able to go into other campuses for further promotions. By advertising over the campuses beforehand, presenting both speeches (introduction) and our awesome robot, we set up around 8 teams for CRC 2016 and they all finally decided to join this year's game. Afterwards, we keep sharing our first-year experience with them as a pioneer team.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

With all our presence and efforts on posters and online propaganda, we help recruit for two FTC teams in our school every year. In annual campus club exhibition, we display our robots. As a result, around 120 students sign up for our club yearly, and over a third of them participate in FTC. Combining our own knowledge and experience, we made plans for their set-up. We also reached out to some sponsors to support their initiation and supply their future needs.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

We kept translating 2-year FRC Game Manual into Chinese within 5 days for the entire country. Also, we created a tweet series called 'The Hitchhikers guide to FRC' to share more our own experience. As a leading team, we organized Shanghai FRC Alliance, directly helping and passing *FIRST* messages to them with regular gathers. We're also active in FRC China group and prepared to answer any question, constantly helping pass messages from Lead Robot Inspector of Shenzhen Regional to China this year.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

In CRC 2015, together with other senior teams, we supported 4 Chinese rookie teams with their mechanism and achieved Rookie Inspiration Award. Before CRC 2016, we directly mentored on 8 Shanghai rookie teams, including basic mechanics and programming for FRC Stronghold. This year, we keep supporting in Shanghai FRC Alliance, offering our opinions, tips and tutorials with regular gathers. We also assist 5 FTC teams (2 in our school) and train their team members with their mechanics and finance,

Describe your Corporate/University Sponsors

Novelis.Inc, Autodesk.Inc, (Foreign tech. ventures) Dadalele.Co.Ltd, iFlytech.Co.Ltd, Maisui Maker Space.Co.Ltd, Roboterra.Inc, (STEM edu companies) Sineva.Co.Ltd, Jiangsu Josun Air Conditioner.Co.Ltd, Turing Robot.Co.Ltd (Local tech. ventures) and SJTU (University). We cannot further accomplish our goals without our sponsors' grants and technical supports, and would like to express our heartfelt thanks to them.

Describe the strength of your partnership with your sponsors with special emphasis on the 2016/2017 year and the preceding two to five years

We work collaboratively with our sponsors and generally build a mutual beneficial partnership with them. These partnerships are strengthened by frequent contacts so that all our sponsors could really get involved. Noticeably, in this year, we regularly visit Turing Robot.Co.Ltd in their factory and share our ideas with them. Dadalele.Co.Ltd offered us platforms to promote *FIRST* programs together and Roboterra.Inc offered us internship opportunities to unite us to bring STEM to more children

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST is a program including 4 robotics competitions targeting different age groups with the same goal —the inspiration of sci. and tech. towards the youths. Teenagers participating in *FIRST* master a range of professional and social skills for their career lives. *FIRST* is MORE than Robots. It makes a huge impact on our communities, with people from all works of life being more aware of STEM edu. & giving their supports. It's an entrance for us to connect to the world and recruit friendship too!

Briefly describe other matters of interest to the *FIRST* judges, if any

Blue Power is exploring with great passion. We developed a team management system in 6 months, dividing nearly 60 students effectively into 6 depts. Activities were carried out every work day with various engineering goals on our own. All our graduate students stayed in our team for inheritance. We also spread our passion to others. We inspired our rookies and other teams by designing our own FRC course syllabus. Furthermore, we offer our supports to our school's STEM courses with our sponsors.

Team Captain/Student Representative that has double-checked this submission.

Jiajie Ma

Essay

'The way stretches endless ahead, where we shall seek from heaven to earth'. With a decade's history inherited from FLL, FTC and VEX Robotics, Blue Power has been currently progressing with FRC since 2014, as a persistent explorer and inspirer. 'Bluers aren't blue, Power is power'. After school, we play with nuts and screws late into night. At weekends, we go onto streets with robots and passion. During holidays, we call on others to make 'techie gathers'! Whenever we make an introduction about ourselves, the statement stays the same —*FIRST* is MORE than robots and so is Blue Power. For us, *FIRST* is an exploring and interactive process of innovation and a huge step towards our career life. For our mentors, it's an educational project filled with fizz and energy, and all about our growth and achievements. For our sponsors, it's a great donation to the future as well as the development of STEM education. All in all, it has given us an opportunity to take a deeper insight into STEM and furthermore light up our community.

With a Chinese background, Blue Power's encountering more challenges and enjoying more fresh resources at the same time. Team administration is a huge concern due to an educational system difference. Therefore, after some successful communications with a few experienced teams (i.e. team 694, 525, etc.), A team administration constitution, dividing nearly 60 members effectively into 6 departments (mechanism, programming, strategy, logistics, business, and publicity), was developed in 6 months by ourselves. What's more, we're glad to see women leaders are playing increasingly vital roles on our team, with the fact that the president of mechanism and publicity are all females this year. Besides, students in all grades are clearer about their personal goals due to the constitution. We take pride of leading effectively within our team, so we can lead others.

Stay safe and work collaboratively is a motto we keep in mind from time to time. Under team collaboration, we cultivate greater passion. This year, all of our team members are distributed into 5 work groups before the Build Season. They alternatively take charge in 5 work days with independent goals ranging from pneumatics to chassis. Furthermore, our alum all came back to our team as mentors. Fire in our big family never dies out.

From 2015, we put a huge emphasis on inspiring our rookies as well as our entire school. On one hand, we designed a series of FRC course syllabus along with a package of teaching material for tutoring by ourselves. The content covers 16 topics, ranging from safety to machining. Parts of these courses were translated on our own from open documents abroad, including CMU Robotics. All our schoolmates are more than welcomed to participate in these classes to develop new skills after school at our base. What's more, from 2015, all the students can select from Labview programming and Autodesk CAD Inventor for their STEM courses on every Tuesday due to our software and mentor supports. Witnessing their excitement, we invited our sponsors such as Autodesk Inc. and Roboterra Inc. to deliver more tutorials. As a result, Blue Power is well known and strongly supported by the entire school, being recognized as the most prominent sci. and tech. club for years.

Beyond our school, we have spread FIRST messages in innovative ways in our wide community. In the past 2 years, we set up our own Wechat and Facebook Official Account. Along with our website, we tweet our personal stories and photos to tell people robotics is not a rocket science, with the desire that more of them can join us. One of our team members also initiated a Mooc program, influencing 2709 students across Shanghai with 670 comments. Our dept. of publicity also focuses on producing animation to captivate more audience. In FRC 2017, our safety animation gained a video view of hundreds in a week. In addition, our presence at some robot street shows and popular sci. and tech. expos helped us introduce more people to robotics. This year, we worked with JoffreLab, a well-known educational organization, to plan TEGAJoy, an event for students and parents to experience the most cutting-edge technology in July. Meanwhile, we invited team 5839 to play an authentic FRC field competition with our robots and delivered a speech about FIRST spirit. To sum up, during our outreach, we have shared our stories online with a page view of 9037, reached out to 15426 people in social media news and passed FIRST messages to above 170000 families, approximately 340 thousand people across China through a national news program.

As we concentrate on promoting STEM education, we also helped initiate other FIRST teams. With all our team members' devotion and efforts on posters and online propaganda, we help recruit for 2 FTC teams in our school every year. In annual campus club exhibition, we display our robots. As a result, around 120 students sign up for our club yearly, and over a third of them participate in FTC. Our team members also helped initiate 2 other FTC teams in Nanjing and Shanghai. Combining our own knowledge and experience, we made plans for their set-up. We also reached out to some sponsors to support their initiation and supply their future needs. Overall, in the hope of inspiring future engineers, since 2015, we've assisted 5 FTC teams on both technical and finance aspects. It's worth mentioning that some of them even made some achievements in several events, such as Innovation and Communication Awards.

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With the opportunities of CRC (China Robotics Challenge), we keep calling on others to join us as a pioneer team. In CRC 2015, with the supports of our sponsor Dadalele Co., Ltd and many experienced teams such as 1538, 987 etc., we made FIRST loud in China for the first time, assisting 4 Rookie FRC teams across China on their mechanism in Shenzhen. By spreading Gracious Professionalism, our leading performances were highly recognized with Rookie Inspiration award. This year, with a vision of setting up an FRC alliance in Shanghai, we spent 3 months initiating 8 local FRC teams before CRC 2016 with Dadalele Co., Ltd. Meanwhile, our mentors and sponsors contacted those new teams' teachers beforehand so that we could visit their campuses for further demonstrations. By presenting introductions about FIRST and our team, demonstrating our fancy robots, we successfully motivated 8 out of 10 schools to join the FIRST community and compete in CRC and FRC competitions. Afterwards, we kept sharing our rookie-year experience with them for a start-up. Some of our mentors and team members even respectively supported several teams on basic programming and mechanism for FRC Stronghold. Since 2014, from 1 team with only 9 students to 10 teams with more than 200 —we couldn't be prouder to witness Shanghai, as the host of CRC 2016, becoming a place where sci. and tech. are increasingly celebrated partly due to our contributions.

Now, Shanghai FRC Alliance associates students across the city together and functions more than our imagination. As the leader of the alliance, we keep sharing our FRC teaching materials and regularly conduct some gathers to deliver our experience and expertise, offering opinions and tips for other teams. With the supports of Dadalele Co. Ltd, we could even invite team 2974 to exchange our experience on publicity and finance. By bringing Shanghai teams together and keeping on the same pace with them, we know we're no longer alone —and some day they will inspire others just like us

inspired them.

Besides, Blue Power has been persistently leading and supporting development of FRC in the entire country. In the past 2 years, we kept translating FRC Game Manual into Chinese within 5 days after it was released. It's our honor that our translations were finally recognized as the official Chinese versions, supporting around 41 teams across China by lowering the language barriers. Apart from translations, our dept. of strategy also focused on highlighting some vital game rules to serve all other teams as BP-tips. Our 3-year experience prepared us to answer any question raised in FRC China group. This year, we even constantly helped pass messages from Lead Robot Inspector of Shenzhen Regional to all FRC teams in China.

'The Hitchhiker's guide to FRC' is another far-reaching resource for all Chinese teams to progress through the season more smoothly. Based on our FRC course syllabus, the guide is a series of tweets aiming to offer effective information to help out teams during the Build Season. This year, the topics covered 'Know Safety —no pain', 'Time management — Time is, time was, and time has passed', etc. with a page view of 1000+ in total. We also plan to release our authentic Build Season progress after this season so that other teams can freely comment and adjust theirs.

We could not accomplish so many goals so far without our sponsors' sustained supports. By regularly visiting their factories and making online discussions (such as Turing Co. Ltd, Novelis Inc. etc.), we really get our sponsors involved in FIRST program and our progress. What's more, our sponsors' focus on developing STEM education is also admirable. In 2015, Roboterra Inc, A STEM educational cooperation, offered us internship opportunities, wishing to unite us to bring STEM to more children. We believe that only by drawing more social organizations' attention on STEM education, can we raise the innovators of tomorrow better.

"Every time we pass over a mountain, we make a huge step forward for who we are." Passion for robotics, inheritance of Blue Power, inspirations in STEM education —all of these still can't fulfill what FIRST means to us. Blue Power is growing stronger and we strive to lead others to explore FIRST. The world of Sci. and tech. is still waiting for a revolution, and that's what we take as our FIRST mission: keep making a difference to spark the most beauty of sci. and tech. wherever we go.