

## Chairman's Award - Team 5883

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2018 - Team 5883

### Team Number

5883

### Team Name, Corporate/University Sponsors

3M/Krasnik County Warden/Marshall of Lubelskie  
Voivodship/Erkado/PBF/CEWAR/FANUC/NABOR/SIGMA/WodBud/PBI/Partex/Mar-Jola/Archimedes/Bank Spoldzielczy  
Ziemi Krasnickiej/Wschodni Klaster Innowacji/FedEx/MTL&Zespol Szkol nr 3

### Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

Participation in FIRST Robotics Competition gives us valuable knowledge and experience in the field of STEM. Over 70% members of our team choose studies related with Mechanics, Engineering or Information Technology. Being a part of the program makes us more creative and self-confident. Both students and mentors learn how to be leaders, present themselves, cooperate with each other within the team and with foreign teams or deal with the biggest global companies like 3M or FedEx.

### Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

Spice Gears members have a chance to lead many events during which they talk about FIRST. We visit primary schools and take part in the events like: PGA, nation-wide Scientific Conference, like NLab. Increased interest in robotics can be seen in the increased number of members of our team over the years. More and more children join FLL teams. For further outreach we use media such as the Internet, newspapers or TV. All the universities in our district are interested of our team members.

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

Frequently, we take part in many TV programs, in which we talk about impressions and experience acquired at FRC in Canada and at FGC in the USA. To this day, we inspired 407483 people in Poland. We inform them about the theme of the current season, and about the tasks during the competition, as well as the progress of construction of our robot. We give interviews to newspapers. Every time we have a chance, we encourage young people to participate in STEM and invite them to join FIRST family.

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

Our team is the best example that willingness and hard work are able to break all barriers. We are first and still the only one team in our country. It was hard to convince companies and government authorities to believe in us and become our sponsors. We are self-taught. We have learned everything by ourselves, from the basics, which was appreciated in 2016 by judges in Windsor, who awarded us with Judges' Award. We have talked about our work and we have shown our workshop to other teams.

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

We are working hard to create FRC teams in our country. With FRC Team 2220 we visited the Marshal's Office in Lublin and Kra?nik County Governor's Office. We presented both our teams, the problems with gaining sponsors, and the development of potential FRC teams. The authorities decided to give us financial support. Principals of local schools expressed their willingness to create new FRC teams. We had a meeting with students from Bi?goraj, they have already taken steps to create the team.

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

In this year, we created 12 new FLL teams. We have also organised regional FLL tournament in Lublin. We made a movie during this competition to help us in the robot demonstrations we constantly organise. We received 3 sets of FLL parts from Team 2220. We gave those kits of parts to our FLL teams. One of our mentors - Marta G?uchowska, wrote a book about Lego and FLL. This is the first complexed FLL manual written in Polish and it helps us in further development of FIRST in Poland.

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

We have established contacts with the teams from abroad - 2220, 5526 or 4191. Our cooperation is based on mutual assistance in finding sponsorship, organising various projects, robot design and programming, and reaching out to the whole world. Taking part in the FGC, we were aware that many members of this event encounter robotics for the first time. We have mentored all the FLL teams in our region during the Hydrodynamics season. Our members visited them at least once a week or more often.

**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)**

At least two times per week we talk with FGC teams: Team Chile, Team Peru and Team Tanzania. Usually we talk about designs of our robots and program code. On November we hosted two mentors from Chile. During FLL building season we visited FLL teams, we mentored them online and we created two movies in Polish and explained FLL rules. We are also a part of Robots Without Borders project, together with the team 2220 we visited primary and secondary schools all around Poland to inspire youth.

**Describe your Corporate/University Sponsors**

Our main corporate sponsors are: 3M Company - paid for the team's registration this season as well as in the previous seasons. Polish Bearings Factory, Nabor, Archimedes- financial help and technical support. FedEx - robot transportation. ERKADO, Fanuc, WOD-BUD, MAR-JOLA, GT85, CEWAR, PBI- financial support. Partex - printer for cable marks and parts. The Marshall of Lubelskie Voivodeship, Kra?nik County Governor's Office - financial support.

**Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years**

Our sponsors not only do give us financial support but they also invite us to their headquarters and show us the latest technological solutions (3M, ERKADO). We participate in all the events organised by our sponsors promoting their generosity. When we give interviews to media, we always give examples of sponsors who help us. We promote them on our T-shirts, stickers on robots and in promo videos. We add posts about them on our fan page on Facebook.

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

FIRST is a chance for young people to involve in innovative projects, which develop their talents and creativity as well as self-confidence, and teach the effective teamwork based on mutual cooperation and friendship. The main goal of FIRST is to change the widespread culture of the world in such a way that STEM would be fully appreciated. Students have an opportunity to wake up aspirations in themselves to be leaders in the world of science and technology.

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

We are the members of Robots Without Borders project. We have hosted Team 2220 who shared their experience providing us with trainings in safety, outreach and 3D printing. As Team Poland - second place in FGC 2017. Two years ago, in Windsor, as a rookie, we were awarded the Judges' Award. Last year, in Calgary, our captain was nominated to the Dean's List Award. We created 12 FLL teams. Two of our mentors published books: the first in Poland Lego textbook and CISCO network manual.

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

Szymon Szostak

## Essay

### Spreading the ideas of FIRST

Spice Gears was created in 2016, since then we visited 13 primary schools, 3 high schools and 2 universities. Most of those schools we visited more than once. Each of our meetings we adapt to the level of recipients. During meetings we present the ideas of FIRST. We explain how we share our work during building seasons and off-seasons. Many of our listeners want to know how we raise money and get new sponsors for the team. Every time we present materials about us in the form of photos, leaflets and videos. At the end we talk about the benefits gained from joining the team. To bring the subject of closer we let them drive the robots. We try to document every visit and robot demonstration.

### Members

When we registered 5883 Spice Gears team consisted of 17 members including 3 girls and 11 boys. In addition, we had 11 mentors. During the year, the number of participants increased to 20 people including 5 girls and 15 boys. At that time, the number of mentors decreased to 6. The dynamic recruiting activities of the team in 2017 allowed to increase the number of members up to 24 people in the 2018 season, including 7 girls and 17 boys. This season, the team is mentored by 5 people.

### Parts of Spice Gears

Spice Gears is divided into 5 groups. All groups cooperate closely and learn from each other. The introduction of the division into groups has allowed the team to clearly divide responsibilities. Each part of the team is responsible for individual tasks in the team:

#### Mechanics:

- conducting training in mechanics and robot construction
- construction of robots
- repairing broken parts
- documentation of the construction of robots

#### Electricians:

- conducting trainings on electrical systems in robots
- creating robot electrical systems
- repairing electrical devices

#### Programmers:

- conducting trainings on programming of robots and electrical devices
- robot programming
- electronic equipment management

#### Social-media

- conducting trainings about contacting sponsors and presenting the team
- contacting sponsors
- giving interviews to newspapers / TV / radio
- registration for awards
- administration of social media fan pages, including Facebook, Twitter, Instagram, Snapchat and YouTube.

#### Safety:

- conducting training in first aid and safety at the workplace
- carrying out safety documentation
- safety at work

#### Media

Every step is documented on many social networking sites by social-media group. We currently have Facebook fan page, Twitter, Instagram, Snapchat and YouTube accounts. All posts on Facebook are written in two languages - Polish and English, which allows reaching a larger audience. We record and share a lot of short clips about our team that are often watched and commented by our viewers on YouTube and Facebook. Our video promo of the Team Poland at the FGC competition has over 10,000 hits and almost 100 shares. People who work in local radio, TV and newspapers often visit our workshop. So far we have given 18 interviews.

#### Conferences

We are invited to conferences during various important events in our region. Our presentation consists of presenting the team, our work and accomplishments. So far we have participated in 28 conferences. In each speech, we emphasize what is FIRST, how it works and what are the benefits of joining it. We want to bring the concept of STEM closer to large audience. One of the most important conferences in this year, where we presented our robots, was NLab - Nevada-Lubelskie acceleration bridge. During this conference our FGC robot brought the signing documents of cooperation between the Lublin region and Nevada.

#### Government & the team

The team's priority is to maintain a good contact with local government. At the beginning of the team's existence, we set ourselves the goal of cooperating with as many institutions as possible. It is important to stay in touch with people exercising power in our country. At the moment, Kra?nicki County Governor's Office is one of our biggest sponsors. They invite us to participate in all the events they organise in our region. This year, we visited the Marshal's Office four times at meetings of the most influential people in Lublin region. The Marshall, S?awomir Sosnowski is inspired by our actions and supports each of our steps. The representative of the European Parliament, Krzysztof Hetman visited our workshop and promised financial assistance.

#### More than FIRST

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Nowadays, the team is not just about robots for us. We want to reach as far as possible and get involved in other areas. Our captain became Dean's List Award finalist and as a rookie year we won Judges' Award but it is not enough for us. FIRST taught us to be more comprehensive. Our achievements:

- Taking the first two places in the competition for the best robot, organized by AGH University of Science and Technology in Kraków, which is one of the most prestigious technical universities in the country.
- Submission of two mentors Dariusz G?uchowski and Bartosz Pisiak to the national competition "Volunteer of the Year".
- We sent 1500 postcards to the heroes of World War II under the 'Bohater ON' action.
- We promoted NEXBIO which competed in the 'THE VENTURE' international competition to win one million USD.
- 2 times we took part in "Polak potrafi" crowdfunding program to raise money for the team to go to competitions in Windsor and Calgary, Canada.
- 2 times we donated blood - we want it to be the team's tradition.
- One of our mentors, Dariusz G?uchowski, has published the book "CISCO Network Administrator".
- Lublin University of Technology, seeing our achievements, took the team under patronage.

**Robots Without Borders**

FRC 5883 Spice Gears is the first team to join FRC 2220 team from Minnesota in Robots Without Borders (RWB) project. Our cooperation is designed to spread the idea of FIRST and encourage to broaden knowledge of STEM. Team Minnesota visited Poland twice, each visit lasting a week. During their visit we tried to show them as much of our country as possible. We visited 3 companies, 3 schools, the Marshall's Office and we were invited to a conference for principals and teachers of all the schools in the region. In each of these places both our teams explained what is FIRST and presented the benefits of development of robotics and technology in our country. Team 2220 conducted trainings in safety, outreach, 3D printing, and mentoring of FLL teams. Their experience helped us create 12 FLL teams in our region and successfully organise FLL tournament.

**FLL**

FLL is the team's main focus this season. We created 12 FLL teams in our region, and each of the teams was mentored by our team members. Our team prepared YouTube video manuals in Polish to help newly formed teams, the length of both recorded videos was 1 hour and 40 minutes, apart from that we made online training sessions in programming, robot construction, and project preparation.

During the Hydrodynamics season we mentored FLL teams via Skype and conducted on-the-spot meetings and trainings for the teams who asked for our help - 5 times we visited the team in Karczmiska and 4 times we visited the team in Stró?a. We let one of the teams, Spice Gears Jr. work in our workshop.

With the support of local government and Hands-on-Technology non-profit organisation, we organised the first FLL tournament in the region, it took place on January 13 2018. Covered by the media, the event was an instant success and it already encouraged many people to start new FLL teams. We recorded a video from the event and one of our mentors, Marta G?uchowska prepared first textbook about Lego and FLL in Polish, which will make the process of creating new FLL teams much easier. In the summer we have also visited primary school in Lviv, Ukraine to help them set up the FLL team.

**FIRST Global Challenge**

FRC 5883 Spice Gears was invited to take place in the FIRST Global Challenge in 2017, members of our team were the core of Team Poland. It consisted of 6 members of the team 5883 and one member of the team 2485 who is of Polish origin. To build the robot, we met every day, devoting 13h per day to our work. Before the competition we were invited to the Polish Embassy in Washington DC, where we had a short meeting with the Ambassador. He promised to help us in our future endeavours.

During the competition, we focused on cooperation with others. We were aware that many teams do not have such experience as we, so we wanted to use our knowledge to help them. During breaks between matches we repaired the robots of other teams. For Team Tanzania we built the entire pull-up mechanism, we helped Team Peru with program code, for Team Dominican Republic we repaired their broken robot chassis. Before the competition, we prepared safety leaflets on how to behave at the pit and to be careful during work with the machine. To this day, we stay in touch with many participants of the FGC competition. We hope this cooperation will help us in establishing new FTC and FRC teams all around the world.

**Plans for the future**

Our main goal is to recruit as many talented young people from our town and surroundings as it is possible. To achieve our goal we hang posters promoting Spice Gears in various places. We also want to engage more mentors, who could lead our team and support us during the build season. In 2017 we fulfilled the plan to create 12 FLL teams in our province and to organize FLL tournament. This year we will try to increase their number to 30 and organize following competition, maybe in Kra?nik. The plan assumes that we will get a larger number of sponsors. Our dream for the future is to set up FIRST headquarters in Poland and organize FIRST Regionals in Europe. We have plan to recruit more girls to our team. We also want to participate in competitions not related to FIRST and develop themselves. We want to finish the project and construct robo-hand for the woman who had lost her in an accident. We made it because we want to help.