

Sponsorship Prospectus

The Drop Bears

FIRST Robotics Competition Team 4774



2018

About Us



The Drop Bears is a high school robotics team with students from all over Sydney in years 8 - 12. We compete in sports-like competitions on an international scale attracting more than 3000 teams. The focus of the team is to design, build, and program a new robot each year to participate in the FIRST Robotics Competition (FRC).

FIRST is a not-for-profit organisation that inspires today's youth in areas of Science, Technology, Engineering and Mathematics (STEM) by hosting a new challenge each year for teams to compete in.



Inspiring Youth



We aim to engage students from across Sydney in areas of STEM, introducing important industry experiences. These skills are tested in a working environment where we design, fabricate and program a robot to fulfil the challenge of the game. Students learn skills in project management, communication, managing finances and running a team. We operate as a student-run organisation with adult mentors in relevant fields, working alongside students to guide them and develop their skills. Currently, we are comprised of 50 members and with your support hope to develop the team further.

We focus on teaching skills and abilities such as:

- Teamwork
- Programming
- Design & CAD/CAM/CAE (Computer Aided Design / Machining / Engineering)
- Project management
- Communication skills
- Conflict resolution
- Time management
- Problem-solving
- Manufacturing techniques



About Us



Design

Design a robot and all included modules using technology such as CAD.

Program

Write code to allow the robot to complete all necessary tasks.

Build

Use engineering skills to construct and fabricate a robot that meets functional requirements.

Schedule

Six weeks from receiving the challenge to delivering the final robot.

Competition

Compete against teams, in both domestic and international competitions.

Outreach

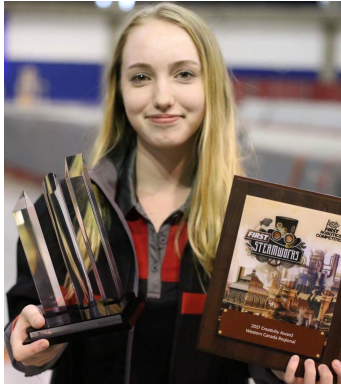
Engage and recruit high school students from across the Sydney region.

Our People



"The Drop Bears has been home to me since 2016, and the team has provided me with experiences and skills that I would never have gained in a classroom setting. This was a great introduction to fundamental engineering skills, allowing me to get a feel for the tools in the workshop as well as build up confidence to communicate my ideas to a large team of people and carry a project from conception through to completion."

Kashif Hakim
Team Captain, 2018



"The skills learned within the team that are not available at school were extremely valuable - e.g. Coding, Computer-Aided Design (CAD), workshop skills, project management. Similarly, working with mentors from the industry and university is a useful tool to be introduced to a workplace that would simulate respective fields. Working with industry partners through sponsorship provides experiences in dealing with professional agencies."

Ellie Hebden

Studying Mechatronic Engineering/Medical Science at University of Technology Sydney
Drop Bears Alumna, 2016



“The University of Sydney and The Australian Centre for Field Robotics is proud to have hosted The Drop Bears for the last 5 years. It's also personally gratifying to help students discover their passion for STEM subjects, and apply their passion in a way that goes beyond what they could do at school.”

“We'd love for you to join us on this journey.”

Dr James Ward

*Australian Centre for Field Robotics at The University of Sydney
Head Mentor, 2013 - Present*



“Warren Smith & Partners have been sponsors since 2014. We have had the team and their robots at some of our company marketing events. As a mentor it is a rewarding experience and we would be thrilled to have one of the graduates work in our firm. The experience in strategic planning, design, building and project management that the students gain can be applied to a great variety of technology related professions.”

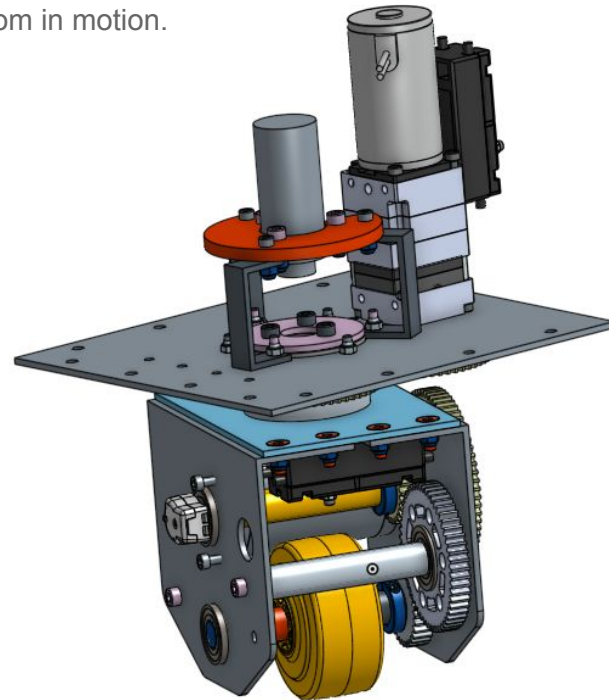
Andreas Heintze

*Chief Operating Officer at Warren Smith & Partners
Mentor, 2013 - Present*

Swerve Drive

Swerve Drive: a omnidirectional drive train enabling 360 degrees of freedom in motion.

After the successful debut of our swerve drive system, we are committed to continuing its development this season and in seasons to come. We are currently the only Australian based team that have developed their own swerve drive system. This system allows our robot to travel in any direction like a powered shopping cart giving us unprecedented agility on the field. As such, we see it is as important to continue to refine the design and function of the module.



2018 Achievements and Awards



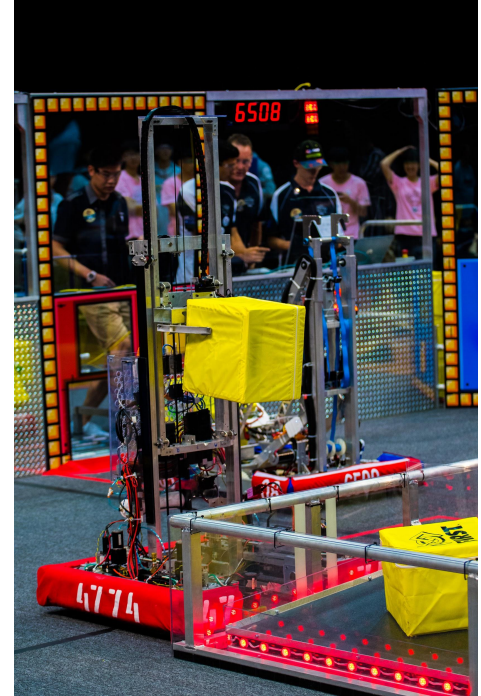
In the 2018 competitions, our team competed alongside teams from around the world in the Southern Cross and South Pacific regionals. Both competitions were extremely successful, taking our team to new heights. Alongside alliance partners, The Drop Bears were semi-finalists at the South Pacific regional and finalists at the Southern Cross regional.

Awards:

At the Southern Cross regional we introduced our newly developed swerve drive. We caught the attention of competition judges who awarded us with the 'Innovation in Controls Award'. Similarly, in our second competition, we impressed judges who awarded us with the Creativity award for smooth and creative execution of scoring points during the game.

Innovation in Controls award - Celebrates an innovative control system or application of control components, electrical, mechanical or software to provide unique machine functions.

Creativity award - Celebrates creativity in design, use of component, or strategy of play





Looking Forward

Looking forward we hope to expand our workshop so that we may be able to further refine swerve drive and develop other innovative projects. To that end, we need your help to achieve this and other goals.



Travel

A recurring goal for our team is to reach the FRC World Championships, which are held in the US. These prestigious competitions require the team to win a domestic or overseas regional competition. However, this does not include tickets, robot shipping, accommodation and food. Funds allocated for this go towards subsidising travel for our students and mentors.



Event Registration

Our team pays a registration fee for each FRC competition event. This registration fee includes two Sydney FRC Regionals, an overseas FRC Regional, Duel Down Under (an offseason event) and the Kit of Parts (a standard kit that teams receive each season containing a barebones chassis)

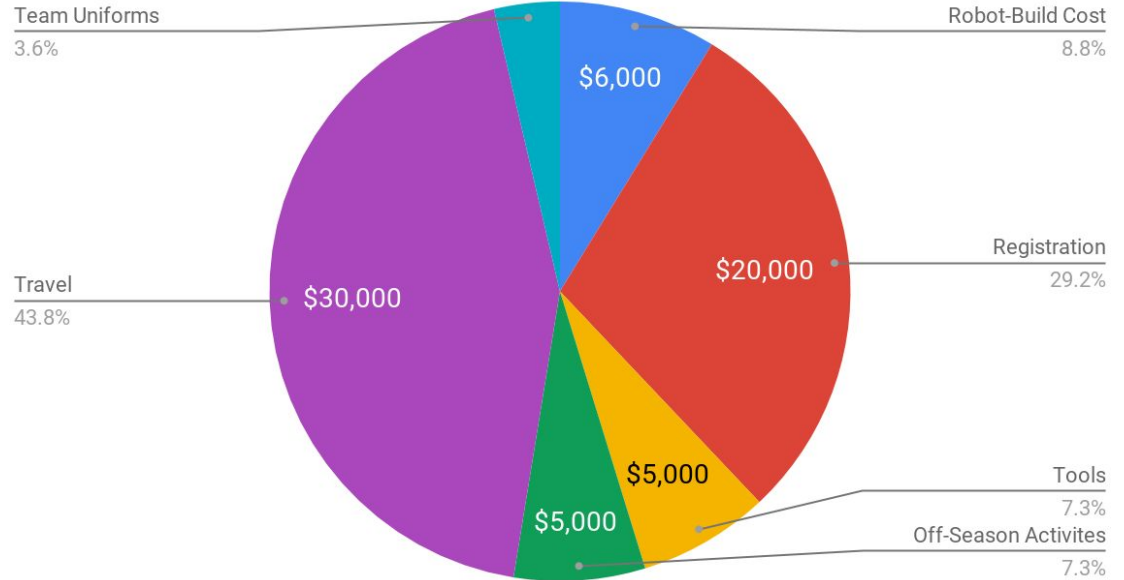
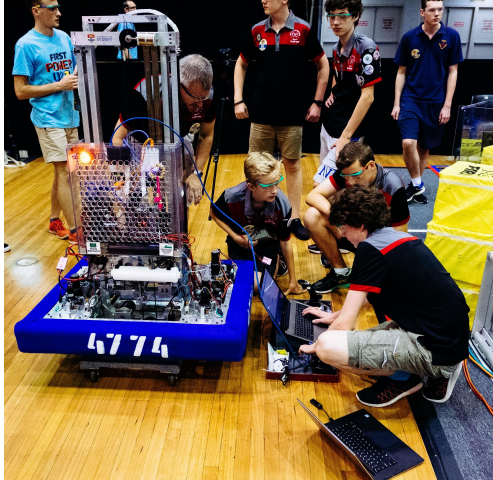


Tools and Equipment

Our team has a modest library of hand and power tools, however additional funds to purchase new equipment will supply us with the tools to expand our technical skills, improve our manufacturing capabilities and increase our production quality. This will allow us to grow our team's ability to run more projects and increase our resources to produce higher quality robots.

2017 Budget

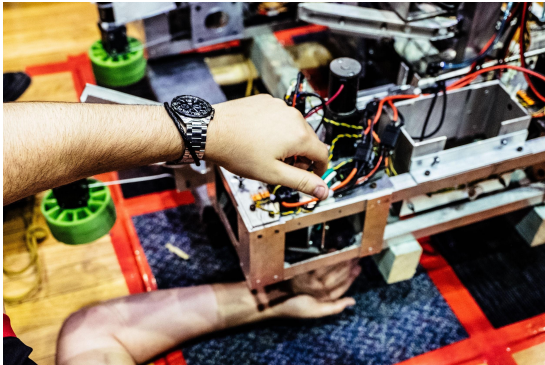
Team running costs for 2017. The team raises a modest amount from affordable annual membership fees. We rely on the generous support of our sponsors to compete in each year's competition.





How Your Sponsorships Helps

Right now we are looking to fund the following items, sponsoring one of the following items or sponsorship tiers is greatly appreciated.



Item	Cost	Description
Workshop Equipment	\$10,000	This sum would pay for additional fabrication equipment and testing hardware.
FRC World Championship travel	\$2,500 per person	Airfares, accommodation and food to the US should we win an FRC Regional event and qualify for the World Championship.
Overseas FRC Regional	\$2,500 per person	In previous years our team has travelled to the USA and Canada.
Event Registration	\$20,000	This amount covers the cost of registering for three regional events.



Equipment Wish-List

- **Lathe**

A lathe will enable the team to manufacture high precision round features from holes to tapers allowing us to manufacture custom shafts, axles, bearing journals, collars for hex shafts etc.

- **Oscilloscope**

An oscilloscope will be used to analyse electrical signals, testing sensors and output signals on the robot and in our projects.

- **CNC Router**

A CNC router will give us the capacity produce complex geometry in a variety of materials including wood and aluminium.

- **Linisher**

A Linisher allows us to soften hard edges on metal in addition to polishing purposes. This increases work safety through the removal of hazardous sharp edges. Additionally, it aids us in tool making including but not limited to allowing us to grind tools for the lathe, mill and restore drills

- **Batteries + Battery load tester**

Batteries are put under strain throughout our seasons. Funding is required to purchase a battery load tester so that we may test battery health, purchase new batteries and pay for the recycling and disposal of old ones.



Sponsorship Tiers



Platinum
\$10000+

Gold
\$5000+

Silver
\$2500+

Bronze
\$1000+

Have any suggestions?

We are open to suggestions for other ways your business can help us, please contact us to discuss sponsorship options.

Please get in touch, regardless the scale of your potential involvement, we welcome your support. Please email us at sponsorship@thedropbears.org.au



2017 Sponsors

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