

[www.roboroos.org.au](http://www.roboroos.org.au)

**NEW  
VOLUNTEERS  
&  
MENTORS  
WELCOME**

## CLUB DATES /UPCOMING EVENTS

### FRC Robot Build

Tuesdays 6pm - 9pm

Saturdays and Sundays 9am-5pm

at 3A Macquarie Ave,  
Hillcrest.SA.

### FRC South Pacific Regional

Fri 15th Mar - Sun 17th Mar

QuayCentre, Sydney Olympic  
Park, NSW.

### FLL World Festival

19th Apr - 21st Apr

Detroit,USA.

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# Student Robotics Club of S.A. Inc RoboRoos Newsletter

## CHAIRMAN'S MESSAGE

The RoboRoos steering group has been considering our needs as a Club with regards to premises. At present, we run our activities in private houses (with sincere thanks to all our hosts) and at the University of South Australia.

We have started to meet with and write to politicians and senior policy leaders, but we need a task force and good senior level contacts with whom we can share our case and enlist their support. We also need volunteers who can **contribute** to a small premises team — which will have the mission of specifying and articulating what we need, developing the pitch and executing it — and an architect or industrial designer, a quantitative surveyor and a commercial builder.

I expect this project to take 2–3 years to fully execute, so get comfortable where you are now, but we will do our best.

Regards,

Peter J.

Go Roos, Chariman,

Student Robotics Club of South Australia, Inc

## GET INVOLVED

Membership period 1st May 2019-30th April 2020 .

Can submit form now as Expression of interest to get priority.

<https://www.roboroos.org.au/get-involved/>

Team	Age Group
FIRST Robotics Competition (FRC)	14-18
FIRST Tech Challenge (FTC)	12-18
First Lego League	9-16
Alumni	

# FROM THE CAPTAIN



Since our last newsletter, we've had a busy time as a club ... We had success from the FLL teams at regional, state and national events, and success from our new FTC team, all made possible by members of our team volunteering time to run the events.

The FRC build is well underway for Destination Deep Space! The students have jumped in to the design process, recording with the DDS system, prototyping in Lego and doing tests in CAD. It has been fantastic to see all the different designs the students have been coming up with — from vacuum suction to Velcro.

As we continue through the build season, we will be prototyping and eventually building our final designs! The design process has been especially rewarding, with the new feasibility gates, in which we talked to industry professionals and they provided feedback, so students could make educated decisions about designs and prototyping.

Our students have said that they are more excited for this build than they have ever been! Another notable quote includes: “The build has been so satisfying, as so far we have gotten a real industry-based insight into what the design system is like in the real world” (Kara J).

There are a couple of notes I would like to leave you all with. Firstly, all the students involved with the build thus far have had an amazing attitude and ideas. Secondly, prepare to blast off to Sydney for the regional competition in March (check your emails for more information). And finally, **check your emails!** Students, mentors and parents alike, this is our primary form of communication with you!

And that's it from me, GO ROOS!

*Jess, Team Captain*

“The build has been so satisfying, as so far we have gotten a real industry-based insight into what the design system is like in the real world” - Kara J.

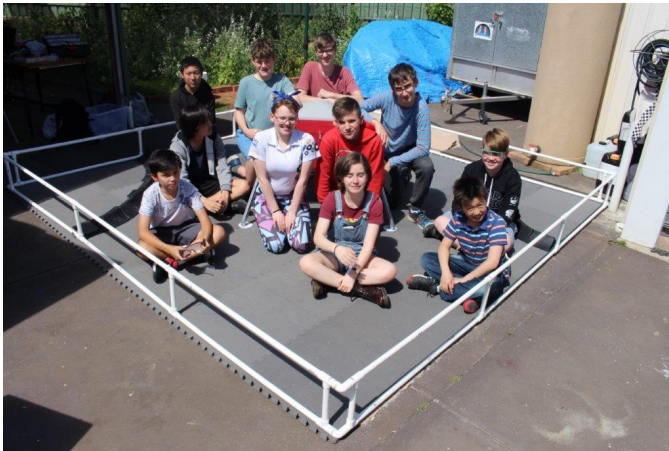
## LOOKING FOR SPONSORS

We are looking for additional financial support for the Club to enable us to continue to offer and run our programs. If you have ideas or know of organizations or individuals who can provide support, please refer them to Peter or Fiona. We have four sponsorship levels at 20, 10, 5 and 1 thousand dollars and a supporter level at up to a thousand dollars for the season, entitling supporters to different benefit levels. We are open to discussions on the form of both monetary and in-kind support. You may contact Fiona at [fiona.mansfield@roboroos.org.au](mailto:fiona.mansfield@roboroos.org.au) to discuss about options.

# FTC 2018

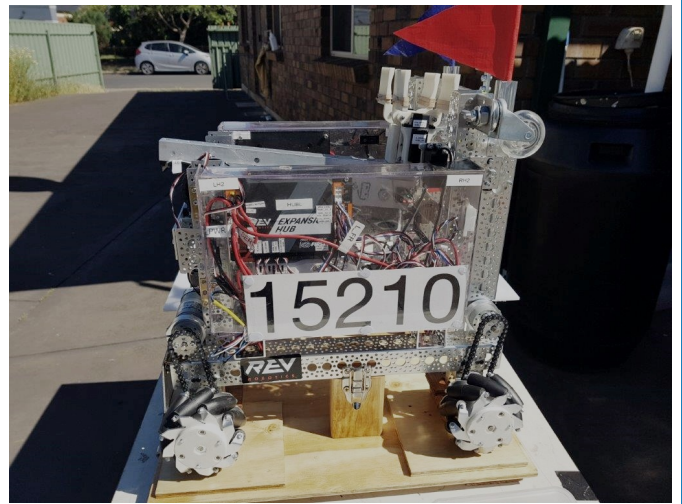
## FIRST TECH CHALLENGE EXCITEMENT

The 2018 First Tech Challenge, Rover Ruckus, season was an exciting, challenging and successful experience for the RoboRoos. This was our first ever time being involved in FTC, and saw us compete as a rookie team — number 15210. Our excitement and determination complemented our results, as we were successful in both state and national competitions. In addition, we also organized and managed the inaugural South Australian



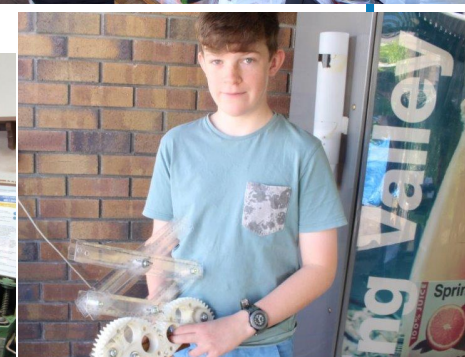
FTC event at Trinity College and assisted in mentoring and starting many new South Australian teams. The build and competitions provided great opportunities for our team to broaden our engineering and robotics knowledge and understanding as well as instilling the concepts of teamwork. These experiences provided a pathway for the RoboRoos as we begin “hopping” into the world of FTC.

On Saturday, 9 September, FTC commenced for 2018 as the first South Australian FTC kick-off event was hosted at Trinity College. A consortium of South Australian teams gathered to view the kick-off video and excitedly discuss potential robot ideas for this year’s game. The following 10 weeks were fuelled by excitement as we faced a range of challenges and learning opportunities throughout the



process of constructing our robot. The first 3 weeks of the build period focused on the design and countless brainstorming sessions took place in order to have a stable plan for the robot. In the lead-up to the competition, we were anxiously waiting for the much desired parts to arrive, as we could then begin the construction and finally the programming phases. The build phase was a period full of excitement and learning for both new and experienced club members, as we worked hard to have the robot ready for the South Australian state scrimmage.

--- Sarah E.



# FIRST TECH CHALLENGE SCRIMMAGE



The South Australian scrimmage, held on 18 November, was, for our new members, a first experience of a competitive robotics environment. The opportunity for the team to be immersed into such an atmosphere proved to be extremely beneficial, as it provided everyone with the occasion to drive and operate the robot whilst gaining experience in a competitive environment. We were extremely successful throughout the heats and were selected as Alliance captains and



A week after our success at the state scrimmage, the RoboRoos went to Sydney to participate in the national competition. This was the most exciting weekend of the season, as the team greatly improved their teamwork skills while socializing with teams from all over Australia. Our hard work over the build phase paid off, as we were awarded the Think Award for our effort and detail invested into our engineering notebooks. However, the invaluable experience we gained from the build and the numerous competitions could not have been achieved if it weren't for the hard work of the mentors, Jeff, Adam and Bianca, and many parents involved in the club. The RoboRoos' FTC journey for the 2018 season was a great experience for all lucky enough to be involved, full of learning, excitement and engineering.

--- Sarah E.



joined with Mitcham Girls in the finals, eventually winning the overall competition. In recognition of our detailed and well presented engineering notebook and cohesive team spirit, we won the Inspire Award, despite still being a rookie team in the competition.



# FIRST LEGO LEAGUE 2018 COMPETITIONS



For the first time ever in South Australia and due to the growing popularity of First Lego League in our state, the regional competition split into 3 "local" competitions in which the best performing teams progressed to the next stage. RoboRoos had 2 FLL

teams compete at a South regional competition held at Immanuel College. By the end of this competition, BOTH East and West teams won significant awards and proceeded to the State Level. RoboRoos East was able to claim the best "Robot performance award" for the highest scoring robot on the playing field and "Championship award" for performing exceptionally in every category.

The state competition was held at Pedare, where again both teams performed exceptionally well. Roboroos East were the runner up in "Championship award", which qualified them to move to the National Championships in Sydney. They also bagged the "Highest robot performance award" by wowing the judges with their impressive My Block coding.

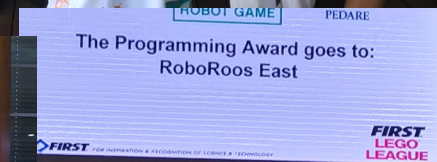
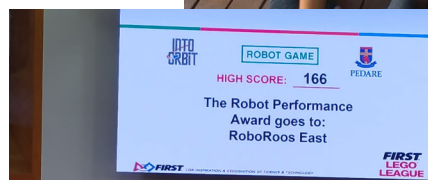
The National competition was held at Macquarie University, where the Roos had difficulty with their robot, but managed to wow the Judges with their project, The Pressure Roo. Not even a timer malfunction, which caused the Roos to restart half way into a well performing match, could stop them from achieving the highest point scoring game yet, a massive 164 points. This put the team in the 8th position out of 69 teams in robot performance. Based on overall team



performance, they were ultimately placed as runner up in the National Championship award, which gives a chance to compete in the World Festival in Detroit in April this year!!!

Go RoboRoos and good luck for the next step of the competition!!!

--- Jack H.



# FRC SEASON 2019



## Kick-off - Sunday 6 January 2019

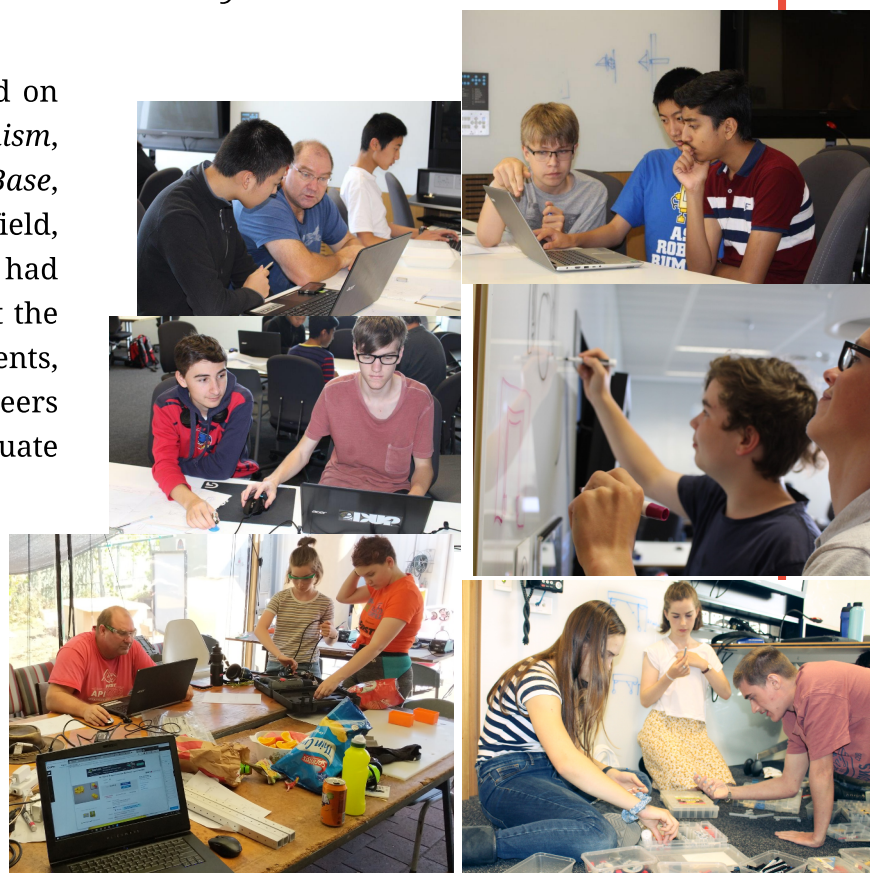
**KICK-OFF DAY** is the start of the hectic FRC build season. On the 6th of January, we had a great turnout of students, mentors and parents to gather at UniSA for the release of the game, Destination Deep Space. The day continued with terrific discussions about the season's challenge, for the robot and as a club. After a general discussion of the game and the rules, students were divided into groups to discuss initial thoughts on design and strategy.

In the first week of the season we worked on basic concept designs of the *Hatch Mechanism*, *Ball Grabber*, *Climber System* and *Drive Base*, with the help of Jess Shannon, Jack Mansfield, Jeff Jenkins and Rob Zibell to guide us, we had designs in place for our *Feasibility Gate*, at the end of week 1. The day had us, the students, present to a panel of six professional engineers and robot enthusiasts, who helped us evaluate and adjust some key aspects of our design. We began prototyping on the weekend.

Week two was a big one for us. In the week the team started to discuss on the pros and cons of the different solutions the team members had created. After deciding on a particular design, we

divided up and assigned people into specific tasks. Some worked on the *Hatch Mechanism*, some worked on the *Ball Grabber*, while some worked on the *Climber* and the others on the *Drive Base*. By the end of week 2, the RoboRoos nearly had the Robot in CAD with the *Hatch Mechanism* the *Ball Grabber* and the *Climber*, as well as drawings ready to machine and assemble on the weekend.

--- *Zuhayr S.*



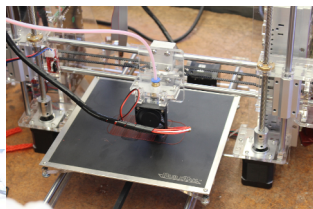
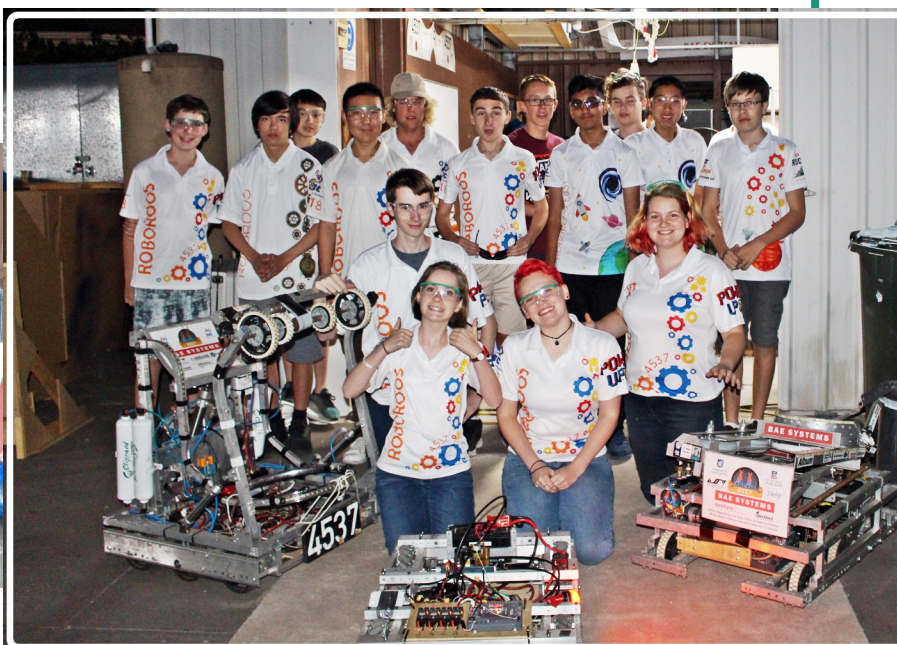
# ROBOT BUILD

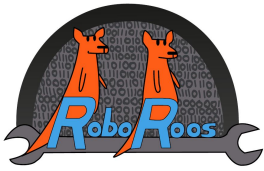
In week 4 the robot had been assembled with great precision and accuracy, but with adaptations as we solved problems. We had students working in different groups to make the work more efficient, and so they could understand their key element. We even had the software subteam working on programming the robot to make it as accurate as possible and make it move, the electrical subteam working on the robot's brain, and the mechanical subteam's building the robot and the mechanisms—all of which combines to make a majestic robot! This week we have started construction on our second robot. While we still adjust our main robot the second



robot will be important for practice once the main robot is bagged and tagged on the 19th of February and sent off to Sydney!

-- Zuhayr S.





## HOPPING INTO ENGINEERING



Who are the RoboRoos?

We're a community group, FIRST® Robotics Team and so much more—including South Australia's first FRC team.

The team's purpose is to excite young minds about STEM (science, technology, engineering and mathematics), by using a common interest: Robots.

As part of this, students get real industry experience, with help and guidance from dedicated industry professionals as mentors. It circumvents the age-old circle of being unable to get a job due to lack of experience.

Part of our ethos is to maintain a gender balance, which we continue to strive for and achieve.

Contact us at: [roboroos@roboroos.org.au](mailto:roboroos@roboroos.org.au)

## SPONSOR RECOGNITION

The Club works with every sponsor and supporter to understand their motivations, expectations and desired outcomes from supporting us, and we understand the need to meet those expectations. We have a number of ways of physically and digitally recognizing support. We are happy to discuss other means of recognition (including anonymous donations) on a case by case basis.

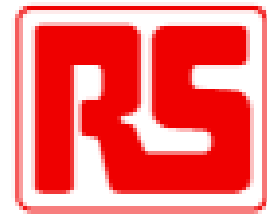


# SPONSORS - THANK YOU

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