July 2023

Student Robotics Club of S.A. Inc
RoboRoos Newsletter

www.roboroos.org.au

WELCOME TO AN EXCITING SEASON OF NEW EVENTS

CLUB DATES/ UPCOMING EVENTS
AUGUST

FLL:
Official Season Launch
2nd August (1st Aug- U.S. time)

RoboRoos Event:
Science Alive
4th, 5th & 6th August
Wayville Showgrounds

Club Open Day:
13th August 12 - 4pm
Club rooms, Tonsley

From The Chair:

As the proverb goes - May you live in interesting times.

It has certainly been an interesting year, starting with fantastic efforts of each of our competition groups, through to a changing of the guard at RoboRoos.
Now that life is mostly back to normal - this is now our first, hopefully of many, newsletters to ensure we are all aware of how successful RoboRoos
is both in terms of educating students in STEM and how it applies to Robots, but also in competition performance.

Changing of the guard :
Although some haven't had children participating at the club for a number of years, the passions of Peter Ryan-Kane, Fiona Mansfield, and Sharon Gilmour, and Damian Byass have kept each of them in the driving seat to ensure that all of us newcomers just slot into a club where things happen like clockwork.

Finally after many years of exemplary service to the Club, the executive team have decided to take some time out to focus on their lives outside of the SRCSA.

In order to make this happen, we have had a changing of the guard, and a number of new people have volunteered to help with the running of the club.

A part of this process was to elect a new Chair to take over the brilliant work done by Peter in driving the club, and this is where I now fit into the picture -

My name is Sandy Carney, only just on the right side of 50, with a background as an Electronics and Software engineer for nearly 30 years, covering many fields of product design/development, coming to eventually running my own company
in Melbourne for 15 years.

From The Chair - cont'd

During COVID times, like some of you I'm sure, I had some time to have a bit of a epiphany, deciding to move to Adelaide to become the Electronics Group Manager at Micro-X over at Tonsley Innovation District, to let me focus more on my family and less on business.

My 10 year old son, Owen, is now a member of the club, starting with FTC last year and competing in FLL this year.
As a child he has always had the engineering "knack", at 2 1/2 years old bringing a multimeter from my workshop to help me test cables, luckily he now has somewhere to develop this love of technology and building things with other like minded people his age.

Once I joined Micro-X, I learnt of a Robot club in the old Mitsubishi Building that "could do with some help if you have some time to volunteer".
Ill be honest, after that first night, meeting with Peter and looking through the club rooms, I was completely blown away by the calibre of the work being done by the students in creating these fantastic robots and the efforts being put in by the mentors to help make it happen.

How could I not help out? well this escalated quickly when the club found itself short of an FTC coach a week or two before competition.
Faced with dropping one team of kids, I was asked if I could help the joeys group through the build.
Running with the motto of "fake it until you make it", I agreed and joined the Joeys 19377 team, being as green as each of the students.

We then spent 10 weeks building something far beyond my expectations for a group of kids that had not touched tools, or programmed, before.

This is where I saw the passion of the kids really coming out in being able to "teach" their parents instead of the other way around for a change.
I saw the heartbreak and tears when their claw broke at the regional competition causing a slide from 2nd to last position.
Then the pride and joy when they won the innovation award for their creation at the end of the day

Club Structure :
For the coming year we have put together a slight change in the club structure to try and level the load across the volunteers. Some positions are still being finalist and a full organisation structure will appear in next months newsletter.

From The Chair - cont'd

In terms of Club operation each Competition Group should largely run independently to achieve their goals in performing the FIRST challenge.
They will meet at the clubrooms, preferably weekly, throughout each school term as agreed with the Competition lead, the coaches and mentors.

RoboRoos generally does not run during school holidays to allow everyone a break to recharge, but access can be arranged by each competition group if desired.

Robots in 2022/2023 in review :
From the 2022 FTC PowerPlay season we had 15210 The Wafflers head off to Sydney for the Nationals and they performed admirably by being a finalist for the Think Award

Following on from that we had the Rangers FLL team head off to Melbourne for the FLL "SuperPowered" Nationals and did extremely well progressing to the World Championships in Morocco.

At the same time we had the FRC team commence their "Charged Up" season - putting together their Zooper Dooper robot.
Being a much smaller competition group this year, the amount of effort, work and learning achieved by the students over the build period was astounding (and exhausting).

The FRC had a good showing in the nationals, bringing home the Excellence in Design award no less, and learning some valuable lessons, which they put into practice for the MRT competition and showed great improvement in their result.

The Robo Seals took the autonomous boat to Sydney for the National Competition, and while not performing as well as they had hoped, they brought back a huge amount of learning that we will put into the next season's competition.
This season is a Virtual competition open to anyone at the club, so if you are interested in joining in please let Adam Jenkins know as the Competition coordinator.

Training :
Progressing throughout the year each team will conduct internal training sessions, on various topics decided by both the mentors and the students.
This will begin with an introduction to robotics, demystifying the basics of how to get a basic robot together.
Additional sessions will then build on their knowledge gained throughout each season.

From The Chair - cont'd

Training will also be provided periodically on tool usage (age dependant) so that students can make the parts they need (under adult supervision)

External Events :
Being technically intelligent is one thing, we also need to be socially savvy.
On leaving school behind, we need to be able to interact with everyone around us.

So as a club we would like to start providing an opportunity for external events, either as a part of our learning goals, like visiting engineering companies to understand how they might fit into robots, or by doing excursions unrelated to robots to learn more about our team-mates, coaches and mentors, in order to just have some fun.

If students have particular events that you would like the club to organise please let us know and we will do our best to make it happen.

Make sure you keep an eye out in the newsletters and emails for upcoming events to ensure you don't miss out.

While it has certainly been a busy year, looking forward, it seems we are only just starting out again.
I'm sure we will have a great 2023/2024 season for FLL and FTC, starting over the next month.
The FRC team is having some R&R getting ready to restart again in January.

As always please volunteer where you can - as we say the club does not run without your help.
If you feel you can help the teams in any way - even an extra pair of eyes helps, please get involved.
This is a great way of learning robots yourself.

I'm looking forward to more great things this year as a club and seeing more fabulous creations.

All the best
Sandy

Science Alive

A final reminder that Science Alive is upon us on August 4.
This is a key outreach event for the RoboRoos club, where we show thousands of people from around Adelaide what we do, and how we do it better than anyone else.

We have a tremendous event planned, with FRC bots being driven about, the boat on display, and a complete FTC competition with 8 other local teams.

Please assist the club where you can - it is an enormous amount of work to put on but we get a lot of exposure in return.

Please check your emails for the Volunteer Sign Up Spreadsheet.

“A summary of how the RoboRoos Ranger did at the APOC 2023:

On Thursday evening, the opening ceremony & Friendship night was conducted; every team, including the rangers, gave a short 3-minute presentation about their country/culture and individual team member hobbies/interests.

On Friday, the Rangers conducted their first & second robot runs, achieving 275 and 305 points respectively. They were also the very first team to have their judging session in which there were some technical difficulties. Regardless, they did well and the judges were impressed by their LEGO prototype & CAD model.

Their final robot run happened on Saturday evening, in which they scored 365 points. This placed them at 12th out of 48 teams on the final rankings.

At the closing ceremony on Sunday morning, the RoboRoos Rangers unfortunately didn’t win any awards, but there was no disappointment within the team as they were fortunate enough to receive a wildcard entry to be part of an amazing international event where the entire team had heaps of fun, learnt a lot, danced and was inspired and motivated by other international teams. A once-in-a-lifetime experience the team won’t forget any time soon!”

-Abinav

FLL APOC competition, Sydney

FTC

FTC Frenzy

What an off season the FTC team has had. The RoboRoos' FTC teams had only just got over the South Australian Qualifier and the Australian Championships before launching into the new year with a brand new training course, RoboLeague, outreach events and planning for the upcoming build season, CENTERSTAGE.

CENTERSTAGE

FIRST have announced the theme for the upcoming robotics competitions by inviting teams to join their Art-Inspired Robotics Season, FIRST IN SHOW. In their words, it Lights, camera, STEAM! Science, technology, engineering, arts, and math (STEAM) inspire big ideas, bold action – and creativity.

SO, do we know what CENTERSTAGE? Not much yet, but some ideas are that there could be a stage in the middle that we need to drive onto and that there may be some shooting involved - stars maybe. What are some of your thoughts?

Training Course

The new training course, run on Tuesday nights, saw new students to FTC along with some of our existing students learn about STEM and robotics. The course run by Sandy Carney and Andrew Cross was well attended and provided the students with much of the knowledge they will need to get the CENTERSTAGE robot up and running.

RoboLeague

RoboLeague has become our off season robotics competition. This year we have had three scrimmages as part of RoboLeague. The first, a fantastic trip to Naracoorte, saw the team play off against teams from Murray Bridge HS, St. Martin's HS Mt. Gambier, Banksia Park HS and Naracoorte HS. The second took us to St. Paul's College, the home of the Paladins and Knights of St. Paul. This scrimmage had the added benefit of a mock judging that allowed the students, especially the new lads, a chance to experience an element of the competition that our teams can definitely improve.

A fantastic new building at Murray Bridge HS was the venue for the third RoboLeague scrimmage. Run by the RoboRoos and hosted by Murray Bridge HS, the scrimmage saw 10 teams battle it out with the Knights of St. Paul and our team 15210 taking out the honours. Kudos must go to the Murray Bridge HS volunteers who put on some amazing soups with all ingredients grown onsite at the school.

FTC- cont'd

The final scrimmage of the PowerPlay season is to be held at Science Alive. We hope to have as many students as possible there as it will be the biggest crowd to ever be at an FTC scrimmage in SA.

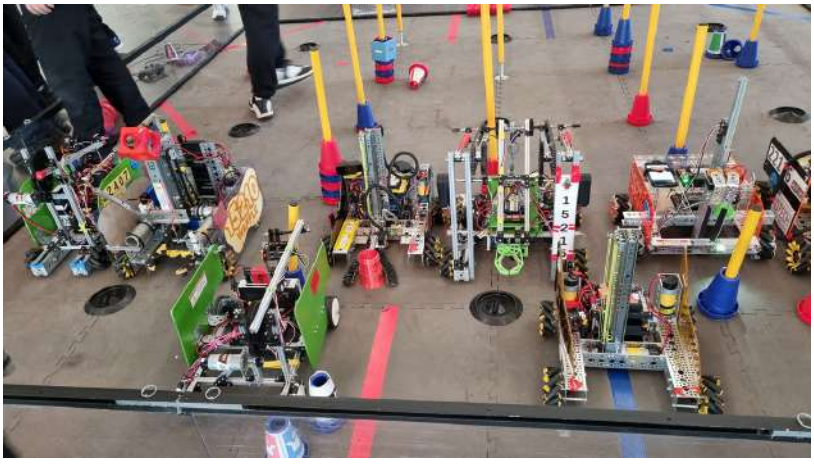
Outreach

An important aspect of FIRST robotics is is spreading the word to a non-technical community. Members of the FTC community have attended Science Collective events at Tonsley and Mt. Barkers to spread that word where they spent time with the general public, explaining the competition and helping children of all ages drive our robots. We also helped out students from Virginia primary school drive our robots as they tour our clubrooms as part of a Children's University and Renewal SA tour of Tonsley.

That's it for FTC for now. We look forward to seeing you all at Science Alive on the 4th, 5th and 6th of August.

- -Michael

Scrimmage at Murray Bridge



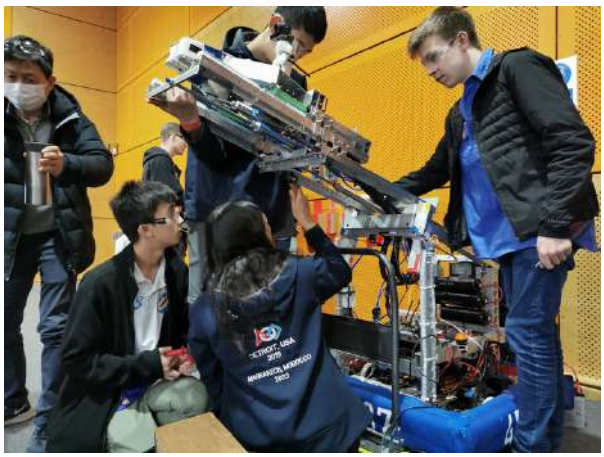
FRC

The 3 day MRT event concluded Sunday 2nd July. The RoboRoos and their robot, Zooper Dooper, performed really well over 22 qualification and final play off matches (not including practice matches) against 14 other teams. Despite some weakened slider parts and the known drivability issue, team 4537 performed consistently and competitively in all matches. It went into the final as the first choice by the 2nd ranked Alliance Captain (7583 Embers). Some of the highlights for me were:

- The team decided on a driver roster to give everyone who wants to drive the chance to practise. The improvement on their collective driving skill was remarkable near the end
- The robot had a major repair following the tipping over on the practice day, in which the whole slider stack was removed and upside down. On the following days despite more tipping over and some serious collisions during the match, the robot stayed mostly intact
- A number of students worked with IC Robotics (5584) to help a local rookie team (9993 Keysborough High) to build their robot so it could compete
- The two major improvement made since Southern Cross (Wollongong) proved to be worth every hour we spent. The robot was able to get on the ramp on its own. The motors never overheated and rendered the robot immobile. The all pneumatics sliders worked super reliably and impressed everyone including the judges.
- Excellence in Design Award from FIRST! Like Jack said, this was the best outcome we could have had at the MRT. But what you have experienced and learned goes far beyond that.

I want to thank the students who went through this long journey. It is your persistence, tenacity and positive attitude that inspired me to be part of it. I wish the students who were in their final year of FRC all the best in your future. Once a RoboRoo always a RoboRoo - you can keep inspiring the younger students by being an alumnus. Thank you mentors (a long list of names here). The club is so great because of you. I personally enjoyed the company of you all!

-Francis



Robo Seals

The Robo Seals have been hibernating a little through the cold winter months, to have enough energy to get back into the next season of Autonomous Boats.

The 2023 season is called VRX and is a virtual competition, open to everyone who is interested, and kicked off on April28 this year, with registrations now open.

Have a look at https://robotx.org/programs/vrx-2023/ for more competition details.

Adam Jenkins will be the Competition Coordinator for Robo-Seals this season, capitalising on the skills he brought together last year for the Robot-X competition, and should be the first port of call for competition related questions as we get the season started.

This VRX competition is targeted at high school level students if you are interested in joining.
However RoboRoos could run it as a learning experience instead of a competition for those who are interested in doing something a little harder without the pressure of competition.

We have our first deadline coming up on September 4th to show that we can at least get the software loaded on our computers and running, and then we can concentrate on the real job of controlling an Autonomous boat.

Only a month later on October 2, we need to submit our Dress Rehearsal which shows that we have started working through the basic scenarios for the boat.
Then again only one month later on November 1, we need to submit our Final Challenge.

We have 8 tasks in total to complete for the VRX challenge including, Station Keeping, Pathfinding, Landmark Finding, Acoustic Perception, Wildlife Encounter, Following the Path, Acoustic Tracking, and finally Scan, Dock and Deliver.

While three months sounds a long time, I assure you from experience it vanishes before your eyes. Hopefully we can put some of our learning from this competition onto our real boat once the weather warms up.

Watch the newsletter and the online calendar for upcoming VRX Sessions to join in.
Remember if you're interested in joining the competition team then let Adam know so you dont miss out

-Sandy

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

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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