FIRST Impact Award - Team 5461

2024 - Team 5461

Team Number

5461

Team Nickname

Victorian Engineered Robotic Nation or V.E.R.N.

Team Location

Meridian, ID - USA

Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.

FRC team 5461, V.E.R.N., believes in teaching skills beyond robotics. Along with the message of FIRST, we promote higher education, social skills, and self-confidence. In the last three years, all of our graduates are pursuing degrees in STEAM fields and 3 are mentoring FRC teams. Within our team, we promote a cordial atmosphere and disregard team hierarchy to encourage sharing ideas. We inspire our members to grow in confidence, encouraging them to speak about the robot at demonstrations.

Describe your community along with how your team addresses its unique opportunities and circumstances.

FRC team 5461 is an Explorer Post through Learning For Life and Scouts BSA sponsored by Open Lab Idaho. FRC team V.E.R.N. is a very diverse team, we have members from 7 public, 2 charter, 1 private, and many homeschoolers. As a neurodiverse team we have the advantage of multiple perspectives which improves our designs. We also encourage female participation in STEAM by presenting at events such as SheTech, E-Girls and Girl Scout STEAM Day. Currently, six of our nineteen members are girls.

Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?

We demonstrate at every STEAM-related event we can. In the last 3 years, we have demonstrated at 12 elementary school STEAM Nights with about 300 people each. TechGirlz and SheTech are for teen girls to get them excited about STEM – we ran workshops for nearly 500 girls and had a booth promoting FIRST. We have done SUMOBot workshops for nearly 200 teenage girls at BSU’s E-Girls Camp and approximately 500 elementary kids as part of Boise School’s STEM-Curiosity Camp targeting Title One areas.

Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

We strive to be a team others want to emulate. Veteran members mentor newer members on CAD, using the CNC mill, CNC router, and other tools. We reach out to help other teams and have done

programming, vision, CAD and brainstorming workshops with FRC and FTC teams. We are out promoting FIRST. Last week we had a booth at BSU's Engineering Day, went to a Cub Scout Pack Meeting, an event at the State Capitol, a demo for the Idaho Ed. Tech. Assoc. Conference and a demo at Hunter Elm. School.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

FRC team 5461's team members strive to be role models. 6 FLL teams came from our LEGO Robotics Day Camps. In October we hosted a workshop for 14 FLL coaches and mentors from SW ID as well as coaches from KY and FL via Zoom. In November we hosted a FLL Scrimmage for 9 teams. Our team refereed the event. We are mentoring FTC team 20169 from PiSTEM Academy, FRC teams 5871 the Chickadees, 7895 Trobots, 8756 Magic Valley Logic Control, 9726 Notus Pirates and team 9737 One Stone Innovators.

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

Many of the events we demonstrate at are targeted towards young people, but one of the most prominent is CHiP Camp, a day camp filled with hands-on STEAM activities. It's sponsored by Micron, one of our generous sponsors, and we've participated in it for many years. We've gained four members in the last three years and another four from prior years due to this camp. We are dedicated to demonstrating at events. Last week alone we had 5 events, speaking with several of our State Legislators.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

V.E.R.N. has spent nearly 10 years cultivating relationships with sponsors, schools, libraries and other entities. One of these has been with Micron Education. Micron is one of our major sponsors and they offer "CHiP Camp" to 8/9th grade youth. Last summer our team ran two days of SUMOBot workshops and in the past we have taken a robot to demonstrate and talk about FIRST. This has been beneficial for us too. We have gained 4 team members from this event in the last two years.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

As a neurodiverse team, we believe in including and welcoming everyone, but our hospitality is not limited. This year we have members from 7 public, 2 charter, 1 private school and several homeschoolers. We regularly present at Title One schools, libraries, and various community events. This year we were invited to participate in the Soul Food Festival in the park with about 20,000 people attending! Over the last three years, our female involvement has rocketed from one girl to six!

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

V.E.R.N. uses several methods to maintain our initiatives' sustainability. New members we gain through events go on to staff other events. We meet prospective sponsors at the events we do and team members follow up with them. To keep costs as low as possible, we ask each team member to fundraise

$300 per year, this helps to offset their travel and other costs, our LEGO Robotics Day Camps cover nearly half of our budget, and we write grants and ask for sponsorships to cover the rest of our costs.

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years

We have several methods to recruit sponsors. At events we ask other vendors for their cards and whom to approach for sponsorships. We have also had luck cold calling companies. To make this 'less scary' for team members we have several "scripts" to use and we role play what to say. We encourage members to go together to speak with companies and are happy to bring a robot to show off. We send thank you's to all of our sponsors and those above a certain amount receive an in person robot visit.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

Currently, our workshop, at our coach's house, is crowded and disorganized. They are in the process of building a large shop and the team will be moving into the new shop this summer. Until then we store equipment when not in use and unused materials are kept out of the workshop. The programmers will be happy to have a dedicated space to work and not the family's living room. One of our sponsors gave us two new rolling tool boxes and we are excited to have these tools labeled and ready to use.

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

We want to be the kind of team others want to emulate. Gracious Professionalism isn't just a "phrase"; it is our ethos. We want those around us to know if they need something, have a question, or are concerned they can come to us and we will do everything we can to assist them. In the last 3 years we have mentored 6 FLL, 1 FTC and 5 FRC teams. We want to grow our team to 25-30 team members with half being female as well as technical female mentors, we can do this through our community outreach.

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

FRC team 5461 has worked very hard. We have been awarded the Gracious Professionalism Award twice, in 2018 and in 2023; Imagery Awards in 2022 and 2023; and Innovation and Control and Creativity in 2019. As a team, we are proud of the recognition we've received as we strive to be as friendly and helpful. To quote team 8756 "We want to get better so we can help teams like you've helped us." It was very humbling to hear them say this and reinforced our desire to be an Impact level team.

Judge Feedback

Who/When	Feedback
Mar 23, 2024 08:25:23 PM EST	**We are always trying to improve our knowledge, initiative, and methods. Where do you think we could improve to reach our goal of being an Impact level team?** **An area the team has an opportunity to improve.** **Something that really impressed the judges.**

Essay

Team 5461 V.E.R.N., the Victorian Engineered Robotic Nation, of Boise ID, consisting of 19 students and 6 mentors, is dedicated to fulfilling the mission of FIRST. We have a team ethos of Gracious Professionalism and we pride ourselves in building aesthetically appealing and functional robots. We have been recognized for these efforts by winning both the Gracious Professionalism and the Imagery Awards twice. Our goal is to spread our love of STEAM throughout our community; teach our members valuable life, technical, and problem-solving skills; and enjoy ourselves while doing it.

Our last three years have been filled with noteworthy achievements. We started both FRC teams 9737 The Onestone Innovators in Boise, ID and 8756 the Magic Valley Logic Control in Twin Falls, ID. One of our former team members created team 9726 The Notus Pirates in order to establish a team in his rural community. Before this team he was driving an hour each way to be part of our team. We have been able to help these teams as well as FRC team 5871 the Chickadees (Boise, ID), 7895 Trobots (Homedale, ID), and FTC team 20169 PiStem Dinos (Meridian, ID) as well as 6 FLL teams in Boise and Meridian, ID. We have been part of several major STEAM events across Southern Idaho. We had the honor of speaking with 9 of our Idaho Senators and Legislators and running a robot for them, and we took the chance to extend an invitation for them to come to the Idaho Regional in March.

The power of outreach cannot be underestimated. We present at every possible event. Accepting invitations and actively seeking out opportunities. Sometimes demonstrating at multiple events in a single day. Our participation in some events has become almost a standard. We've helped with Micron's Chip Camp for nine years, ever since the start of our team, and we have been the only FRC team since the pandemic. In 2023 we ran a SUMOBot workshop during two weeks of their camp for about 300 teens. We are also present at Boise State University's Engineering Day every year, inspiring a love of STEAM in the hearts of today's youth. BSU estimates 500+ people attend every year. We invite high schoolers to come and watch us at our competition, and then join us if they want to. In fact, many of our team members came to the team after seeing us at local demonstrations. If children between the ages of eight and twelve express an interest in robots, we also have LEGO Summer Camps that we run. This camp allows youth to solve problems creatively and gain first-hand experience in robotics.

A big part of our goal as a FIRST team is to promote diversity in our team, so we demonstrate at as many events as possible that target girls and underserved youth. We've done both SheTech and TechGirlz for as long as they've been in Idaho. For the last six years, we've seen about 300 youth participating in SheTech each year, and since 2020 we've had around 250 participants at TechGirlz yearly. Thanks to our frequent demonstrations, and word of mouth six of our nineteen members are female. We always try to engage with high school girls at demonstrations, inviting them to come and join us - whether they don't think they are "good at math" or not. Robotics is for everyone!

We believe that internal improvement makes our impact on everybody around us more inspiring, so we've set several goals for current and future seasons that will dramatically improve our ability to work cohesively as a team. For the next few years, we'll be striving towards better self-sufficiency through a combination of fundraising, extended sponsorships, and in-house manufacturing. As part of our fundraising, we are glad to help each of our members bring in three hundred dollars of fundraising each year. We also make as many of our own parts as possible, making some off-the-shelf products with our own machines. This year, many of our more experienced members are on the verge of becoming alumni, so they have begun passing on their virtual treasure trove of fundraising and machining knowledge to newer members. In this way, we ensure the sustainability of our fundraising and self-sufficiency. Numerous sponsorships have been secured by our team members, including manufacturing companies,

construction contractors, and technology businesses. The mechanical skills, technological understanding, and leadership qualities we instill in our members are vital for the future's workforce, motivating sponsors to support us. We have a tiered approach to thanking our patrons, starting at five hundred dollars and ending with ten thousand dollars, although we eagerly accept any donation our sponsors offer to make.

Our LEGO Summer Camp is not only a primary source of income for our team, but a fantastic resource for kids between the ages of 8 and 12 who like robots. The hands-on robotics experience we provide at this camp is invaluable and the knowledge we share with the kids is foundational to STEAM and FIRST Robotics. 6 Lego League teams have come out of the last two years of our camp. The funds that this camp supplies cover nearly fifty percent of our annual budget.

A major contribution to our team's self-sufficiency is our ability to manufacture our own parts. We are blessed with an abundance of machining equipment we use on a regular basis, including a CNC router, CNC mills, lathe, several 3D printers, and various other tools. Our veteran members share their extensive understanding of both the practical aspects and in-depth intricacies of our machining equipment with the newer members, guaranteeing our team's manufacturing prowess for many years to come.

We sustain a copious amount of role models on our team, starting with our mentors. They are always kind and willing to teach, and they're excellent at explaining concepts in different ways to make sure that every member on our neurodiverse team can fully understand. Each of our mentors has a strong suite, from fundraising, public speaking, and programming to computer-aided design. Together they educate us in every way imaginable.

Our veteran members are central to our learning environment. They teach the newer members practically all of the workshop-related skills, including shop safety, machine operation, tool use, and basic workshop etiquette. They also fill the positions of Team Captains, Mechanical Lead, Programming Lead, and Project Management Lead. These individuals are in charge of both leading the team to fulfill the mission of FIRST and answering any questions that our newer members may have.

All of our members help with our demonstrations at STEAM-related events, sharing the message of FIRST with our community. The contagious enthusiasm we show for our craft illustrates to the public how STEAM can facilitate education, social development, and Gracious Professionalism. We always encourage everyone we meet at events to become involved in the STEAM community, whether as a mentor or as a student.

As previously mentioned, we participate in as many STEAM-related events as possible, but we try not to limit our audience by including less robot-focused events. Last year, we participated in the Veteran's Day Parade, the Gowen Field Airshow, a Boy Scout Fair, the Soul Food Festival and the Boise Public Library Summer Reading Kickoff. These events allow us to showcase STEAM to people who may not otherwise be exposed to FIRST Robotics.

The work we do wouldn't be possible without our sponsors, so we thank them profusely, no matter their donation. Our tiered system grants sponsors special honors depending on how much they donated. A $100 donation receives a team picture thank-you letter and an invitation to see us at competition, while a $10,000 donation gets our robot named after your company and an invitation to join the team at our

travel competition! Levels in between receive company logos on the robot and sponsor banner, two team shirts, a call out on social media, an in-person thank you with the robot at their business, a framed thank-you letter, and their company logo on the backs of our shirts. Plus all of our sponsors are invited to the local competition to join us for lunch and cheer us on!

We're always trying to improve our methods, build season strategy, technological expertise, and efficiency. Last year, our Impact Award submission was lacking in detailed measurability, so we have begun counting how many people we interact with at events. We have implemented metrics tracking on our social media posts and as we interact with the public. We try to connect with everyone on a personal level, answering all of their questions and showing how STEAM creates an atmosphere of friendship and community.

We always hold a strategy meeting before we even start conceptualizing how the robot might look. This year, we included five other teams in our strategy meeting. Our goal was to both help and learn from each other. We discussed field traffic, estimated cycle times, and contemplated different scoring schemes, guided by our mentors and Team Captains. These meetings are critical to the success of the robot design, effectively creating a blueprint that details what the robot will need to accomplish when it's on the playing field.

We are immensely proud of our work and dedication to spreading the message of FIRST and our love of STEAM. Beyond having a contagious enthusiasm for robotics, our members use the skills they develop on our team to improve every other aspect of their lives. In the last three years, six of our members have graduated and all went on to college, showcasing our dedication to impacting our members' lives. We bring people from different schools, different backgrounds, and different age groups and unite them with a common purpose: to spread STEAM, create friendships, and build human beings - I mean build robots.;