

***FIRST* Impact Award - Team 3492**

2025 - Team 3492
Team Number
3492
Team Nickname
Putnam Area Robotics Team (P.A.R.T.s)
Team Location
Winfield, WV - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in <i>FIRST</i> programs.
We are 100% student-led and enable collaboration and problem-solving between mechanical, electrical, and programming disciplines. Due to our commitment to inclusion, all students have a safe environment to make mistakes. 100% of PARTs graduates attend college/trade school and 92% of those students pursue STEM in college/careers. Currently, of the 7 junior or senior mentors, 5 are team alumni. Several alumni are mentors with their own robotics teams or have children participating in robotics.
Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.
We live in a predominately low-income area in a low-income state. Limited access to STEM is another huge obstacle. Elementary students are not taught Science as a dedicated subject. We provide opportunities for students to participate in PARTs and other STEAM related activities free of cost. We have developed STEM kits to give to students at our outreach events and are developing additional titles. We have developed learning opportunities through camps and daily events such as "Robocycle".
Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> Mission in ways that are effective, scalable, sustainable, and creative.
We are training educators & community leaders with a focus on FLL/FLL Jr. to give them the skills and resources to teach a technology-based curriculum to West Virginia students. By training teachers, we enable education for not just today's students, but also future students. We have trained educators at all of Putnam County's elementary schools and are expanding to other counties. We have also partnered with our schools to improve our reach to the Putnam County community.
Describe your team's goals and the progress you have made towards them to fulfill <i>FIRST's</i> Vision.
PARTs shares the same vision with FIRST Robotics. We have worked towards this goal by developing and supporting robotics teams. We currently support 7 FLL teams. We educate kids about all the exciting and interesting areas of STEAM through camps and STEM kits. To date we have distributed more than

500 STEM kits. We also hold various 1-day events such as RoboCycle, for elementary-aged students to learn about sustainability and STEM; more than 90 families attended this year.

What impact has your team seen from your efforts described in the above question? How does your team measure impact?

We have experienced a huge uptick in students wanting to join robotics teams. We currently are recruiting mentors. 80 middle school students wanted to join our middle school team. We are receiving requests from school to attend their family nights. The community is inviting our team to their events. To date we have had a direct or indirect impact on more than 1,000 different families through our attendance at events, hosting events, sponsoring teams, or STEM kits.

Please provide specific examples of how your team and team members act as role models within the *FIRST* community with emphasis on the past 3 years. How do you share these best practices with other teams?

Our graduates return as mentors for our next generation of robotics students. We introduce conservation principles in our work with elementary schools. We support sustainability through bee hotels, pollinator gardens, and vegetable gardening. We also promote a "leave the world better than you found it" mentality through our many sustainability projects. We share best practices via collaboration, networking, and social media.

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

Our students volunteer for FLL scrimmages and tournaments and the FTC State Championship. We've assisted both Putnam County FLL teams, giving them opportunities to present and perform outreach at our community reveal event. Our primary efforts focus on instilling FIRST into the curriculum at elementary schools. We hope to inspire students early, so they develop a love for FIRST robotics, resulting in new teams, advancement to new FIRST levels, and eventually more tech majors and careers.

What other initiatives have you created, grown, sustained, or participated in (*FIRST* or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?

We provided hundreds of Stem Kits at community events, promoting the ideas of the Engineering Design Process and STEM to young kids. The STEM kits introduce children to STEM principles in an interactive and fun way. We also hosted RoboCycle to educate children about sustainability. We have created a collaborative program with students with autism. As a result, we have witnessed a great increase in children interested in STEM because of our hard work.

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

PARTs 3492 works to be PARTners not just seeking sponsorships. Toyota and the WV Conservation Agency are our longest-standing PARTners. Toyota provides funding, our lead mechanical mentor, and more. We partnered with WV Conservation Agency on conservation and sustainability. Hillbilly Hottie Honey has PARTnered with our team to advise and support our development of pollinator habitats. Kathy Talley, master gardener, has PARTnered with us to develop and execute sustainable gardening practices.

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

At PARTs, we have held ourselves to the standard of inclusion and equality. No person will ever be denied entry to our team because of a difference or disability. We accommodate all people and welcome them to our team with open arms! At FIRST competitions we hand out pronoun pins ensuring that everyone is comfortable and understood. The PARTs leads are all female which sets a great example to our community that women belong in STEAM!

Explain how you ensure your team and the initiatives you have created will be sustainable.

Our initiative will run effectively in the future for multiple reasons. We ask for and receive feedback from all team members in selecting our initiative; everyone has a voice on PARTs. We select an initiative that matters to us personally and to the community. We want to create a legacy that positively impacts our community and future team members. On PARTs we also strive to include someone from every grade level and sub-team to ensure continuity.

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

Computer Automated Drawing (CAD) is one area in which our team needs to improve. Our inability to CAD has hurt our team with the ability to design. We rely on outsourcing our CAD or using the CAD of others. We have access to various programs, but we rely on youtube videos to learn how to use the software. Our mentors have tried to find training and mentorship for CAD but our resources are limited. We hope to further address this issue and find a path to effectively learn CAD software.

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, particularly noteworthy, or had a large impact.

PARTs 3492 is deeply committed to expanding technology opportunities within Appalachia. We're not only educating our teachers with the hope that they inspire a love of STEM in students but also supporting technology job opportunities for high-school and college graduates so Appalachia doesn't lose its next-generation workforce to more technology-rich states. We are partnering with two local technology companies on training and work opportunities for our FIRST alumni during college and beyond.

Judge Feedback

- What do you feel is a best practice we should further develop?**
- An area the team has an opportunity to improve.**
- Something that really impressed the judges.**

Essay

In the past three years, our team has grown and evolved extraordinarily. PARTs vision statement is PARTs Robotics aims to make a positive impact on the world particularly in Appalachia through STEM outreach. We are driven by a passion for innovation, a commitment to diversity and inclusion, and a responsibility to preserve our planet for future generations through sustainability. PARTS mission

statement is to use robotics to increase STEM outreach across Appalachia.

PARTs prides itself on its commitment to diversity and inclusion within the team. We are a family, and family comes in all forms, colors, genders, and abilities. Our history includes special needs students working side-by-side with neuro-typical peers and becoming some of our most valued members. Our team has students with Autism, Down Syndrome, ADD, ADHD, deafness, and vision impairments, but we look beyond the limitations to find the liberations and freedoms for each member.

Our team is unusually diverse for our area—in a county where 96% of its residents are white and most girls are not focused on STEM, our team has historically had a significant percentage of minorities. We are also proud as our student leadership team—composed of the mechanical, programming, strategy, electrical, and impact—is 100% female. The team, as a whole, is 43% female.

Many of our students rely on the team for support through tough times, and every student and mentor are willing to talk to anyone who is struggling in or outside robotics. Many students who join PARTs start out without much confidence or self-esteem. Our team is a safe place for students of all backgrounds and beliefs to find who they are. As our lead mentor says, “once you are a member of PARTS, you are a member and family for life.”

PARTs prides itself on being a positive environment for students. We act as a family, lifting each other up instead of competing amongst ourselves. Many students come to the team and find themselves. High school can be rough and having a place to thrive academically and emotionally is extremely important. Our students are passionate about the team and what they do.

Our outreach

Pollinator and Food Gardening

We have started a variety of sustainability projects to help improve our impact on the planet. One of the things we have started is a “Protect the Pollinators” project.

At robotics tournaments, we hand out pollinator seed packets and spread the word of the dire situation that pollinators are in. We also hand out pollinator seed packets at outreach events we attend. All seed packets contain seeds of plants native to central Appalachia.

PARTs is also partnering with the Science National Honors Society at Winfield High School to build Bee Hotels. The Bee Hotels will give bees and other pollinators a resting spot. We are also planting pollinator seeds to provide food for the local bees that may use the Bee Hotels.

We are PARTnering with Winfield Middle School to develop sustainability projects. We are working with the middle school to develop and care for hydroponic towers containing vegetable seeds. This is in conjunction with the technology education class and the Autism program. The vegetable garden program will also expand to include raised bed vegetables to increase access to high quality vegetables. This falls in line with sustainability due to students being taught how to grow their own food. This practice will improve WMS and the students of WMS food sources and ability to grow their own food sources. The excitement we experienced with the middle school students has been palpable. It is fun to see their excitement as their plants grow from the seeds they planted.

Finally, PARTS is working, in conjunction with WMS, to develop a new Monarch Butterfly habitat. The butterfly habitat will be approximately 100 sq. Ft. And it will be used to help restore the Monarch butterfly population to the local area. The Monarch has recently been added to the endangered species list. We were greatly disappointed when we found out we could not create an apiary with Hillbilly Hippie Honey, but being able to help the endangered species of Monarch butterflies repopulate in our area is incredibly important work for us and something our team can take a great deal of pride in.

Recycling

A recent project that the team has been working on is recycling. We practice recycling in several ways. We collect plastic bags and practice reduce, reuse, and recycle. We have collected over a thousand grocery bags, creating plarn, and crocheted them together to form mats. These mats are donated to the animal shelter on a yearly basis. We are experimenting with using the plarn to weave mats as well.

In addition to this project, we use our robotics equipment until the equipment reaches maximum end of life capacity. If we can use the equipment in other capacities we do so. We are also working on ending the use of single use plastics.

Inspired by the FRC challenge "Recycle Rush," our team created a "RoboCycle" game to encourage recycling, raise interest in the engineering field & show children that STEM can be exciting as well as challenging. We hosted close to 100 people at RoboCycle this year. The satisfaction of seeing young students discover ways they could reduce, reuse, recycle items to create art, to use for experiments, to make other objects was incredible for our entire team. It shows us how we can make a difference in our area and positively impact the kids in our communities.

STEM sustainability

STEM sustainability is a program developed to introduce students to STEM concepts and career exploration. PARTs have developed 3 STEM kits we distribute during our outreach events. The STEM kit titles are catapults, squishy circuits, and popsicle flashlights. We are currently in the development of 3 more different STEM kits.

This focus is important to students in Appalachia as many students do not have the opportunity to explore STEM and consequentially those career paths are cut off. Students in the state of West Virginia fail to achieve above a 27% mastery in science according to state testing data. One of our driving forces is to change this and help our students open more doors.

PARTs Team sustainability

PARTs is committed to continuing the PARTs robotics team and developing new robotic talent. Our team is the heartbeat of STEM education in our district. We are developing the leaders of industry for our area. Our team has developed and sponsored more than 5 robotics teams, both FLL and VEX, and a drone team. Our team saw 80 applications for middle school robotics but have been unable to allocate the time and equipment to see that come to fruition.

In conclusion, PARTS is making a difference in our lives, but also in the lives of our communities and our state. For such a small team with limited resources, it is an incredibly powerful gift we are given. ;

