

***FIRST* Impact Award - Team 6424**

2024 - Team 6424
Team Number
6424
Team Nickname
Stealth Panther Robotics
Team Location
Knob Noster, MO - USA
Describe the impact of the <i>FIRST</i> 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 <i>FIRST</i> programs as mentors/sponsors.
100% of our alumni are pursuing a STEAM field. They continue to act as mentors, coaches, and event volunteers whether it's in person, from their dorm rooms, or even as far away as Korea. FIRST has left a lasting impact on members who have gained real-life experiences including budget oversight, time management, and creating innovative solutions with project constraints. We have spread FIRST, STEAM, Gracious Professionalism, and Coopertition, within our Community, Nation, & World.
Describe your community along with how your team addresses its unique opportunities and circumstances.
We are a rural farming community in MO (with no industry), home also to WAFB. Our student body is constantly changing due to the continuous rotation of the military. WAFB has a large technical community including Stealthwerx whom we have embedded ourselves with. We spearheaded the growing interest in FIRST to KNSD to have all progressions of FIRST. We assisted KNSD with the implementation "Strong schools make installations strong" to support strong education for our Nations' Defenders' children.
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?
76% of students in KNSD are involved in a FIRST/STEAM program either during or after school. Information booths & demos in the community including KC Science City, restoring a WACO WWII glider, and our initiative FIRST Fridays are ways we have spread FIRST this year. We measure success by numerical growth and feedback forms filled out after events. Our impact on the military child brought Dr. Jill Biden and the US Secretary of Education to KNSD where we discussed STEAM education and FIRST.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
6424 has been described as "High caliber students & excellent role models for all KN Students." We encourage FIRST core values through our constant effort to help teams at home, abroad, and at events.

We contact foreign teams before we arrive at events to offer assistance and provide anything from batteries, bumpers, & rebuilding disassembled robots. We mentor FLL, FTC, & FRC teams by attending their meetings, giving access to our facilities, precision machining, and regularly checking in.

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

We assist teams without access to a field, provide technical assistance, equipment, and mentorship for FRC teams. We've secured mentors and funding for KNSD's FTC and 7 FLL teams as well as their uniforms and we started FTC team 23595. We provide mentorship, tools, workspace, and official practice field for our FTC team and others in the area including 9849 & 14919. We gave the county 4-H a robot, expansion kit and field. We are also the robot projects judges for 4-H at the county fair.

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?

Our initiative FIRST Fridays inspires students into STEAM at school and beyond our district. We also started FLL Spring Training Code Camp, making FLL a year long program. We've made department training videos as part of our safety program. The councilors are also using those videos to showcase the available PLTW classes we petitioned for. The increased enrollment in those classes and on all robotic teams is how we measure how successful each initiative is.

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

We have partnered with our community by volunteering at local events, designing & building an information board for the city and souvenirs. 3 of our largest sponsors are the direct result of the skills they saw in action and our impact made on students. We've attended numerous corporate conferences through our sponsors to represent them, showcasing 6424 & FIRST. Our work on the B2 & WACO glider led to work studies and internships with Stealthwerx for team members solving real world problems.

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

We actively recruit women in our community to be mentors to inspire young girls interested in STEAM. 100% of our team are certified in FIRST Equity, Diversity & Inclusion training. We ensure all members have equal opportunities on team 6424 and actively recruit underserved students in our community. Students who have gone unnoticed by other organizations due to a disability, struggles with school, or maybe just don't feel like they fit in. All students can be successful now and in the future.

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

6424 has four initiatives that keep us focused on achieving our mission of impacting our community. They are; promote student leadership, veteran team members train new members, students lead events & projects, and we send surveys so we can evaluate our impact. We created a culture of giving back like supporting existing FTC teams by hosting scrimmages, meets, and technical support. KNSD is one of the few districts to offer FIRST programs pre-K to High School & all levels are mentored by 6424.

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

The absence of industry in our community forced us to be creative in recruiting sponsors and we go the extra mile to retain the sponsors we've found. We are grateful for their unwavering support and willingness to provide financial backing, guidance, real world knowledge and experience. We are always working to strengthen our relationship with our sponsors including: sending updates, thank you gifts we made using the equipment they provided, and made "limited edition" items for their events.

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

6424 has amazing coaches supporting every goal we want to accomplish, to the extent that they have taken on double and triple duties coaching all levels. We have increased from 3 to 5 this year however we are still actively recruiting mentors and coaches with specialized skills. We are also utilizing a newly implemented initiative called Career Ladder giving us the opportunity to expose all KNSD educators to FIRST and demonstrate the impact of our team and STEAM education on all students.

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

6424 is student-led and provides opportunities for students to flourish. Students are empowered to progress at a pace that will guarantee their individual success as we train the next generation of doers, problem solvers, and engineers. We prioritize not only our members' success but the success of FIRST by regularly hosting events, scrimmages, meets, training, and we assist team members with relocation and transition by contacting and connecting them with teams at their new duty station.

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.

Our student body is comprised of a unique and diverse population, with 78% of students being military affiliated. This brings retention challenges with the transient nature of military life and fluctuating student enrollment. The hard work we've put into increasing STEAM in our school has created an atmosphere parents desire; increasing our student body. As sad as it is to watch members relocate, it is an opportunity for 6424 to spread FIRST through them beyond our community to the world.

Judge Feedback

Who/When

Feedback

Mar 23,
2024
10:33:53
AM EST

How did you get into FIRST, and how has it affected you?

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

Stealth Panther Robotics (SPR) 6424: CRESCENDOS through FIRST At the heart of our school and community Stealth Panther Robotics (SPR) team 6424 emerges as the spark that ignites the flame of

Science, Technology, Engineering, Arts, and Mathematics (STEAM). STEAM excellence and our impact is felt far beyond the boundaries of our local community. Our team strives to embody a commitment to inspire, promote, and advocate that leaves a permanent legacy in STEAM. "The Robot Builds Us" is more than just a team motto for 6424, it's a philosophy and our way of life. SPR's mission involves instilling leadership, teamwork, and creative problem-solving skills that propel us to empower students in STEAM for jobs that use technologies that don't currently exist to solve problems we don't even know are problems yet. When we walk into our shop, the huge sign on the door greets us and says: "Beyond this door exists high expectations. It is here that we train the next generation of doers, problem solvers, craftsmen, coders, and engineers that will solve the world's problems, from farm to space, with the professional confidence and grace born within this building." One alumni shares, "I was a member of SPR for 4 years. 6424 helped me visualize all the variables necessary to compete at any level. During my time on the team, the engineering design process went from an academic learned construct to real-world implementation. That process guided me through the steps of defining the problem, doing research, specifying requirements, developing, testing, and revisiting solutions. I know it is called the "engineering design process" but to this day, I use this process to address any problem or question that I encounter in the field of veterinary medicine. Through my participation on the team, I am not intimidated by complex problems because I know how to work through them." Inspiring our Community: Amongst the challenges posed by the 2021 season, SPR sought to inspire and turned adversity into opportunity. Transforming an ordinary bus barn into "The Hangar," we hosted the Hangar Games – a 2v2 off-season event attracting 23 teams from 6 states. This initiative led us to manage the 2021 Arkansas Robotics Coop. 6424 also hosts FTC and FLL events in our school district and volunteers at the events we attend. SPR's commitment to inspiring others is evident in our involvement at Regionals, off-season events and our continuous support for fellow teams, demonstrating the true spirit of coopertition. We use the lessons we have learned with FIRST and STEM to help our fellow classmates increase their independence. Like a spoon that we designed to accommodate their range of motion when they could not feed themselves using conventional eating utensils. A family in Knob Noster has been hosting a beloved annual Christmas light display. This annual event has become a tradition for the families in our community and surrounding area for the last 41 years. When they announced their retirement we designed and lasered Christmas ornaments in honor of their final season commemorating their contribution to the community and thanking them for their financial support of the team. A STEAM-Powered District: Our advocacy for STEAM in education extends into the classroom. In 2018, we petitioned the Knob Noster School District (KNSD) to increase STEAM classes and integrated FIRST into the curriculum and we continue to expand the number of programs and STEAM education. With the achievements we made both academically and with our robot during the 2023 season, we were able to effectively advocate for a second PLTW teacher; meeting the increasing demand of engineering and robotics classes at the high school. Our partnership with Whiteman Air Force Base (WAFB) and our solution to solve a recurring problem in the B2 Stealth Bomber led to the WWII Waco CG-4A Hadrian glider restoration project. Our current collaboration with WAFB involves Stealthwerx (innovation think tank on base) providing a work-study program opportunity for team members to work with real world engineers while cementing our status as a global model for military-connected school districts. As of 2024, 76% of the district's students are enrolled in a FIRST/STEAM Program either during or after school ensuring that every Knob Noster student has the opportunity to engage in STEAM education. Community Impact: We have started 10 FIRST LEGO League teams (FLL), 2 FIRST Tech Challenge teams (FTC), and mentor multiple other FLL, FTC and FRC teams as well as county 4-H robotics projects. To retain and recruit FLL members we have introduced a spring training coding camp. Campers meet weekly, do a variety of code based activities with Spike Prime robots to further their knowledge, improve their confidence and gain new skills. We started FTC Team 23595 SCREECH in Sedalia, MO, and are starting a new FLL team in La Monte, MO,

by providing them with essential equipment such as a full game field, spike robot, and expansion kit. We have 3D printed, milled, lasered parts for teams, shared CAD and collaborated with impact teams. We donated a toolbox to FTC 16309, budgeted registration fees for a second FTC team and found two former alumni to be their coaches. In addition, we have contributed to various local events, including parades, designed and built a message board for the city park, and created limited edition ornaments and flyers to spread core values of FIRST. Our FIRST Friday initiative is an awesome STEM activity we started in our school district. Our team leads a STEM activity during the robotics special at school. We send home informational flyers about the activity, Stealth Panther Robotics, and FIRST for students to share with their families. For January's FIRST Friday event we partnered with 5801. We traveled outside our community to KC Science City and engaged students and children of all ages. We demonstrated multiple robots from previous seasons, handed out information about FIRST and assisted 5801 in recruiting new members for their team. Every year we donate backpacks complete with school supplies to the annual community back-to-school block party; 2 for middle school and 4 for high schoolers. We repaired the drama's dept. smoke machine used for their performance of "The Addams Family", created CAD designs then resin-printed components for our sponsor's cake fountain, crafted nameplates for Knob Noster's Mayor and Chief of Police. At the 2023 Green Country Regional our mechanical team built bumpers for several teams, repaired robots, loaned out tools and parts, as well as coding assistance to many others. Our pit crew was so busy helping others that our pits were typically empty other than Atlas, our robot. We knew our assistance was invaluable to other teams when we were paged over the intercom and sent to other pits. A team member said "I felt like a Rockstar whenever I heard 6424 please go to another team's pits." Advocacy Beyond Borders: SPR is not confined by the boundary lines drawn on a map. 6424 advocates for STEAM education on a local, national and world level. Engaging with our Mayor, Governor, Congressman, Representatives, the President of PLTW, the Missouri School Board Association, DODEA Midwest Regional Conference, and at the Strategic Deterrent Coalition are some of the ways we have showcased our commitment to spreading FIRST. In November 2020, we spoke with 4 Star General Timothy Ray, who gave the final approval for the AMAD cover. During that meeting, we discussed the benefits of FIRST on the military child. Our work on the AMAD cover, speaking with General Ray, and our emphasis on the initiative "strong schools make installations strong" brought the First Lady Of The United States to our school in April 2022, the month of the military child. We highlighted the significance of FIRST/STEM education and our impact on the military child with Dr. Jill Biden, and the US Education Secretary, Miguel Cardona. She later requested team 6424 design an original art piece in honor of the military child for the White House. We continue to have an impact beyond our community with our FIRST outreach and expanding the initiative "strong schools make installations strong" for military bases around the world. Our team has been featured in the TV show Wicked Awesome Stuff, and various media outlets including Forbes magazine and Business Insider, amplifying the importance of STEAM education. We are committed to using every opportunity to advocate for educational opportunities and strong schools for all students. We feel it is our duty to ensure that every child, including those from military families, has access to the best possible education to thrive in a rapidly changing world. Our Legacy: Stealth Panther Robotics 6424 is a student-led team that values spreading the mission of FIRST. We strive to provide a life changing program where members develop creative problem solving, leadership, teamwork, and real-world skills to build a better future. One way we do this is actively recruiting students who are willing to put forth the energy and effort that is necessary to be successful and sustainable. Another way we do this is seeking out the underserved students in our community. Students who have been overlooked by other organizations because they struggle with school, have a disability, or maybe they just don't feel like they fit in. We give them a home where they feel confident in their own voice. They are included in every aspect of the team, where they can find their own career path. Students can be successful now and in the future. Stealth Panther Robotics will

continue striving to become the technological leaders in our school, community, and world. We are dedicated to ensuring that the robotics teams and education opportunities we have created in our school district and beyond are sustainable and will remain in place for generations to come.;

