Chairman's Award - Team 6424

Print Close

2020 - Team 6424

Team Number

6424

Team Name, Corporate/University Sponsors

Knob Noster Public Schools / C&C ProPaint / DoDSTEM / Northrop Grumman / Edmentum / DoDEA / Whiteman Spouses' Club / Whiteman Air Force Base 509th Bomb Wing / Just Vision It / Central Logos / Judi Digou & Knob Noster High School

Briefly describe the impact of the *FIRST* program on team participants within the last five years.

Team members gain real-life experiences including budget oversight, time management, and creating innovative solutions to current project restraints. Team members have been granted opportunities to talk about FIRST, STEM, gracious professionals, cooperation, and the values of our team to people within our community and nation wide.The impact on our students is evident as they strive to be more successful due to the opportunities FIRST has provided.

Describe the impact of the *FIRST* program on your community within the last five years.

6424 has assembled and distributed backpacks filled with school supplies at local community events. We held FIRST information booths in the community, at school events, participated in local parades, and donated $1000 to a local police force to provide proper safety equipment and protective gear. We partnered with the USAF in designing an innovative solution for a recurring problem in the 2.2 billion dollar B2 Stealth Bomber. FIRST has been implemented into the curriculum at all of our schools.

Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.

6424 spreads FIRST nationally at events such as the Strategic Deterrent Coalition (SDC) Symposium in Washington DC. We used this opportunity to discuss our AMAD safety cover solution that helps keep the B-2 flying. FIRST gave us the tools and confidence to be successful in this project. Major General Harencak told us that we are a "beacon of hope" to all military affiliated schools and military students, as we strive to exemplify FIRST and core values to all teams, our community and the world.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

6424 members act as role models by displaying effective leadership skills, Gracious professionalism, and exuding core values. SPR hosted a code camp for Heartland 4-H. This exposed county 4-Hers to FIRST. We met with their coordinator and discussed how SPR could help them start their own FLL team. Mrs. Forest our science teacher said "the 6424 members are a different caliber of student. They are polite, gracious, helpful and excellent role models for all Knob Noster Students."

Describe the team's initiatives to help start or form other FRC teams

6424 participated in a conference call with the Department of Defense Education Activity Headquarters Career and Technical Education (DoDEA HQ CTE) Instructional Specialist, Daphnne Bonaparte in forming a team in Ramstein, Germany. We have also held discussions with people about forming a team in San Antonio-Randolph, TX including how to apply for DoDEA STEM grants and other opportunities that are available to districts serving the military child.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

We petitioned the school district to implement FIRST into the curriculum at every school, and this petition was passed and initiated in the 2018 school year. Currently 60% of K-12 students are participating in a FIRST program. We have 40 FLL Jr. teams at Knob Noster and Whiteman Elementary Schools, 7 FLL Teams each with a student mentor from 6424, and 1 FTC team also with student guidance from 6424. With an additional FLL team at Whiteman AFB's youth center, also with a 6424 student mentor.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

This year, with the implementation of FTC into our school district, we have all levels of FIRST. We are able to properly assess each student's skill set, enabling us to guide them through the levels of FIRST. Students are able to progress at the pace that will guarantee their individual success. Through this progression, we are training the next generation of doers and problem solvers for SPR. With the large military community, SPR assists in the transition from base to base and team to team.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

SPR provides 8 student mentors to the Knob Noster School District's 7 FLL teams. The mentors assist with the brainstorming process and encourages the FLL members to utilize the design process and an engineering notebook. SPR is also fortunate to assist rookie FTC team 16309 and hosted the inaugural Knob Noster FTC Qualifier. We have provided them with a meeting space, trained and certified them on equipment in our shop, and encourage the usage of the design process and engineering notebook.

Describe your Corporate/University Sponsors

Our sponsors are: Knob Noster School District, Whiteman's Spouses' Club, Northrop Grumman, Gardner Denver, Edmentum, DoDEA, DoDSTEM, Central Logos, AllPro Electric, C&C Pro Paint, Aranda Farms, and Nana of the North. Our sponsors have donated money to allow all students to be able to travel no matter their financial circumstance, provided team meals while we are on trips, team uniforms, specialized parts and tooling as well as mentors in their specialized fields.

Describe the strength of your partnership with your sponsors within the last five years.

The strength of our partnerships with our sponsors is extremely strong. We are grateful for their support and willingness to provide financial security, guidance, real world knowledge and experience for our team. We are always working to strengthen our relationship with our sponsors including: sending quarterly newsletters, called The Growler, thank you gifts that we have hand made in our robotics shop, and also 3D printing replacement parts for tools of their trade.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

FIRST is an opportunity for students to make lifelong friendships, locally and abroad, become leaders in science, technology, engineering, and mathematical fields while developing unique problem solving skills and real world experiences. When promoting FIRST, we always accentuate that the experience and knowledge students gain is immeasurable. It is the only extracurricular activity for students that can conceivably claim that every student participating has the ability to "go pro."

Briefly describe other matters of interest to the *FIRST* judges, if any

We are a small rural farming community in Missouri; also home to Whiteman Airforce Base and our student body is constantly transitioning due to the continuous rotation of military families. However, our school district has given us a proper educational environment and supports our FIRST programs, allowing us to be capable of big things. For example, we are assisting the school district with the challenge of implementing "Mission Readiness" to support strong education for the Nation's defenders.

For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.

Team Captain/Student Representative that has double-checked this submission.

Jenna Moreland

Essay

Stealth Panther Robotics (SPR) Team 6424 was formed in September 2016. We received the 2017 Rookie All Star at the Minnesota 10,000 Lakes Regional. We captained the 2018 winning international alliance at the Iowa Regional, earning a consecutive ticket to the FIRST Championship. The 2019 season also proved to be prosperous with advancement out of the qualification matches at every event we attended. During the offseason events, Gateway Robotics Challenge and CowTown ThrowDown, we captained the finalist alliance and fought our way through tiebreaker matches. Our team has been featured on Fox 4 News, Forbes, Business Insider, FIRST Inspires, a radio talk show, episodes on News channels, US Department of Defense and an episode of KMOS-TV "Wicked Awesome Stuff" to explain the values of FIRST and to elaborate on a partnership with the United States Air Force.

Team 6424 values the philosophy of FIRST, and have further built upon this with our ethos, "The Robot Builds Us." Our team's goal is to inspire students in the pursuit of science, technology, engineering, and mathematical (STEM) fields while also developing leadership, teamwork, problem solving skills and experiencing the real-world application. Working diligently together, we find our individual strengths and weaknesses, with this understanding we are able to create partnerships that compliment and enrich each other. A member expressed that "this team has made me a better person and I feel like a part of a family not just a team member." Students are able to confidently share ideas to enhance the team in a supportive environment, knowing that someone in the group will have the necessary skills to move from concept to fruition. FIRST has provided us with an outlet to be creative, work on our social skills, establish friendships (locally and abroad), and introduce members to STEM fields that they had not previously considered. Yes, we are building robots, however the robot is just the byproduct of what we do here at Stealth Panther Robotics.

SPR is fortunate to have the support of both Knob Noster and Whiteman communities. We give back to our community. A few examples of how we give back is by preparing backpacks for Whiteman students, having a FIRST informational booth during the middle school's 'March 2 the High School', donating two backpacks to the town's annual Back to School Block Party, the local Shop Small Event, Spring Fest, at Whiteman Elementary Field Day, walking in seasonal parades, we hosted a booth at the 2019 Wings over Whiteman Air Show, and on October 29th, we donated $300 to our JROTC TRIAD Raiders who were competing nationally in Georgia.

Team members utilized their STEM skills learned through FIRST and impacted their community by: creating a specialized spoon to help a student who could not use conventional eating utensils to feed himself, devising a solution to improve the effectiveness of his Dynavox Maestro Speech Generating Device, and partnering with Northop Grumman to CADD (computer aided drafting and design) and 3d print a lifesize model of a specialized tool part used to cut rivets in tight locations inside the wing of the B-2 Stealth Bomber. The part we 3D printed was used to test the compatibility and efficiency with the B-2. Northop Grumman has the data, after testing, to justify the machinery's $10,200 pricetag. On August 23rd, 2019 members of Stealth Panther Robotics attended the Crappie Masters Benefit Tournament in Clinton, Missouri to honor two policemen killed in action, one of whom was from Knob Noster. We donated $1,000 to the Fallen Officers memorial fund so the Clinton police department could purchase safety and protective gear. We also spoke at the tournament about our sincere gratitude to the police force and fielded questions about the FIRST program.

We have started 40 FIRST LEGO League (FLL) Jr teams in the districts' two elementary schools. FIRST has been integrated into the district's curriculum, exposing 100% of elementary and 56% of K-12 students. Our team members are involved in the community and school activities as individuals, however we come together as a team to be supportive of each other and promote FIRST.

From its inception, SPR mentors and coaches were focused on reaching out to students who were looking for a challenge and wanted to utilize their creativity and STEM skills in a place where they could be innovative. In August of 2018, Knob Noster school district added seven FLL teams. Three of our mentors volunteered as coaches and eight of our team members acted as student mentors; we took every opportunity to attend all trainings, FLL meetings, and competitions. We are so proud of our "Stealth Panther cubs" and even had two teams advance to the Missouri regional championship and from that one team received a Programming award and a student mentor was recognized with a Youth Mentor of the Year Award.

SPR started a FIRST Tech Challenge (FTC) team, Stealth Panther Robotics 16309, after receiving a 2018 FIRST Tech Challenge Jump Start and a DoDSTEM grant. The team is composed of 6 underclassmen who participated in FLL, but were ready for the next challenge, and 8 upperclassmen. On December 14, 2019 SPR Team 6424 hosted the Knob Noster FTC Qualifier.

On February 11, 2019 SPR attended and spoke at the Missouri School Boards' Association Legislative Forum in Jefferson City. We attended the Engineer's Luncheon in Kansas City, invited by the Kansas City STEM Alliance on February 21. The team met with Project Lead The Way (PLTW) President Vincent Bertram and discussed the application of STEM skills used in both PLTW classes and FIRST robotics along with how the two programs coincide; PLTW explains the concepts, while FIRST utilizes these skills and applies them to a realistic working environment. On June 7th, 2019, it was our pleasure to house a PLTW board meeting for the PLTW officers who were touring the B-2 Stealth Bomber at Whiteman Air Force Base. Four of our teammates, who are enrolled in the PLTW curriculum, were invited to speak on a PLTW student showcase panel about projects they have completed in class along with their experience and partnership with FIRST robotics and Team 6424.

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In October 2018, after the completion of a mission, a group of switches were inadvertently disengaged on the B-2 Stealth Bomber's instrument panel causing the plane to execute an emergency landing. Brigadier General Nichols declared, "I don't want to wait 10 years and spend 10 billion dollars", so he called the schools' superintendent, and challenged SPR 6424 to create a solution for the recurring problem. We immediately sprung into action, honored to rise to the challenge when our nation was in need.

Over the course of 72 hours, an Airframe Mounted Accessory Drive (AMAD) panel used in the B-2 cockpit became our focal point. Armed with the technology currently available to the team -CADD, a modified 3D Printer, and a FoodSaver vacuum sealing system- the team designed, printed and tested multiple prototypes. We were invited to the B-2 flight simulator where we met with pilots to test our 3D printed ideas. The team left the flight simulator with valuable feedback from the very people their solution would affect. The team continued to make modifications, integrating the feedback received from the pilots. The tenacity, perseverance, and work ethic of the team was evident on day three when we presented Version 8 of the safety cover. The final version of the AMAD cover completed the approval process on November 4, 2018 and is currently being flown in every B-2 and used in every flight simulators. We were ecstatic when State Representative Vicky Hartzler surprised us in our shop to thank us for the "hard work and sacrifices you have made...all that you do to provide quality education to the children of our nation's protectors. The work you do to teach and promote STEM learning...I take great pride in the fact that I get to represent a robotics team in Washington DC, who proudly display the American flag on their shirts and robots."

Team 6424 was the recipient of the 2019 Robert L. Smolen Scholarship Award. This scholarship allowed seven students and three coaches a three day visit to the United States Capitol to attend the Strategic Deterrent Coalition (SDC) Symposium.

The SDC is a nonprofit, nonpartisan community based organization formed to support the Nuclear Triad by providing educational information on the importance to our nation of maintaining a safe, secure, and effective nuclear deterrent. We were recognized for our contribution to the wellness of our nation with the AMAD cover and our supportive relationship with Whiteman Air Force Base.

As described by SPR's head coach, Chris Adams, "FIRST Robotics truly came to life for our team through the remarkable opportunity and partnership with the United States Air Force. The project demanded STEM thinking, critical problem solving, product manufacturing, testing, and quality assurance, all of which occurred in a very condensed and expedited timeline. This is exactly what FIRST Robotics prepares us to do!" FIRST has given us both the tools and confidence to be prepared for jobs that will use technology that doesn't currently exist in order to solve problems that we don't even know are problems yet. When we walk into our shop we are greeting with the huge sign on the door that says; "beyond this door exists high expectations it is here that we train the next generation of doers, problem solvers, craftsman, and engineers to solve the world's problems from farm to space with the confidence and grace born within this building." From helping within our community, to promoting FIRST within our school district, we are ready to RISE to the challenge and inspire each other, the community, the world, and introduce everyone to FIRST as we continue to live by our motto, "The robot builds us!"