

Chairman's Award - Team 5667

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2019 - Team 5667

Team Number

5667

Team Name, Corporate/University Sponsors

New Albany High School/James T. Hutta DDS/Columbus Design & Manufacturing&New Albany High School

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2018/2019 year and the preceding two to five years

Our program sparks passions, creates relationships, and improves technical and leadership skills. Nearly 80 percent of members say that their participation has had a positive influence on their academic goals. The skills that team members learn, including design, programming and business skills, are essential for their college and future careers. Our team's founders are now graduating from colleges like Vanderbilt pursue many careers from STEM to business.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2018/2019 year and the preceding two to five years

In its brief existence, Team 5667 has inspired and assisted in the formation of several lower-level FIRST Robotics teams. The creation of STEM in our community is a testament to the work done by our team. In addition to STEM influence, we also make significant impacts by working with local charities. We have an ongoing relationship with our local food pantry and volunteer consistently at various community events including the New Albany Walking Classic and Kids Only Holiday Shop.

Team's innovative or creative method to spread the *FIRST* message

Team 5667 works constantly to promote robotics. Whether it be showcasing our capabilities by integrating technology into our haunted house or demonstrating robotics at events like TEDxNewAlbany, we get our community and sponsors involved, shining light on the potential of robotics. Over the years, we have mentored many junior teams, held an engineering workshop for younger students, and conducted CAD workshops with professionals. In the future, we aim to spread the message of FIRST even further.

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

The Digital Eagles' constantly display FIRST values by spreading gracious professionalism and cooperation. Whether it be helping other teams with code, or volunteering at FLL invitationals, Team 5667 always displays the core values of FIRST. We are especially proud of our work mentoring young teams to awards like 1st place teamwork award in FLL. We are always demonstrating core values and our robot in order to encourage young students to pursue robotics and to start their own FIRST teams.

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

Our team provides a strong brand for FIRST in our area through unique events like our robotics-driven haunted house, inspiring the founding of teams in nearby communities. We also assist younger teams through forums like the WOW Alliance and strategy sessions at PAST Innovation Lab. We provide guidance, both in advice at FIRST events and resources through our website, to other growing teams. We provided such advice to the Savage Tumaz 6947 while they faced coaching crises similar to our own.

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

We founded FTC (all of whom are going to states) and FLL teams in 2018 and 2016 respectively. In addition, we have created FIRST participation by giving presentations to students, in the US and beyond, in order to get them excited about robotics and FIRST. The goal is to one day inspire them to join a robotics team and a STEM career. Team 5667 mentors several budding teams like the Columbus Jewish Day School, and provides local teams access to our facilities.

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

Team 5667 believes that helping FIRST teams in our communities lead to positive impacts on society. We communicate and help mentor several FLL and FTC teams in local schools, such as Columbus Jewish Day School, and Marburn Academy. In addition, two of the FLL teams we helped create have since progressed to FTC and have found success through our guidance. Many of the FLL students we have mentored in past years have also moved on to our 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)

Team 5667 mentors and volunteers with several FIRST teams, including FLL and FTC teams at the Columbus Jewish Day School, New Albany, Marburn Academy, and the Taiwanese FRC team The Savage Tumaz. Team 5667 also volunteers and hosts an FLL competition with a local FTC team. We also allow other teams to use our workspace. We are fully committed to FIRST principles and expanding the influence of Gracious Professionalism across generations.

Describe your Corporate/University Sponsors

Working with our community sponsors, our team has created partnerships with nearly 20 sponsors. In addition to monetary support, our sponsors also provide us with invaluable technical expertise, project management skills and other valuable resources. Sponsors who provide support with technology and fabrication include Information Control Company, Columbus Design and Manufacturing, and DS Solidworks. Our other sponsors include College Lift Off college planning and Academy One Childcare.

Describe the strength of your partnership with your sponsors with special emphasis on the 2018/2019 year and the preceding two to five years

As a young team, we started without any partnerships or funds. Over the past five years, we created long term partnerships with sponsors who allow us to participate in FRC. As part of their mentorship, sponsors like Columbus Design and Manufacturing provide access to resources like CNC, their years of experience during the build, and opportunities after FRC via internship. Some sponsors have become so passionate about FIRST that they even traveled with us to competition in the 2018-19 season.

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

FIRST is an organization dedicated to spreading competitive robotics. Since inception, FIRST has given hundreds of thousands of kids the opportunity to build the technical and business skills necessary to succeed in STEM. Every year, teams compete to build all 120 pounds and \$5000 of our robot - but FIRST goes further. Through the competition series, FIRST alumni learn both skills and values that enrich their lives and set them on a path to future success through collaborative competition.

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

This year, our team hit several important milestones. First, we increased team diversity by tripling the number of female members. Second, we dramatically improved our project management, working with professional POC's and adopting more independent management strategies promoting autonomy. Next, team members traveled to Taiwan, working with students to spread STEM education to the underprivileged population. Finally, our team implemented the Digital Eagles STEM Plan to improve STEM education.

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

Elijah Mansur

Essay

Our Vision:

As a team, we, The Digital Eagles, see our community as a vast constellation of opportunity to share what we've learned about cooperation, gracious professionalism and STEM skills.

Inspiration Through Education:

As part of the Digital Eagles STEM plan, we held a six-week Computer Aided Design (CAD) camp this summer that taught local students and FIRST teams the techniques of 3D modeling in Solidworks. These students were able to apply what they learned to FIRST and also learned an important skill for future careers in STEM. Not only this, but many students who took this exclusive class joined our team and other FIRST leagues.

Our team is also an advocate for greater focus on STEM curriculum within our own school. In past years, because many STEM programs at our school have failed due to a lack of funding and inaccessibility, we are motivating the overall student population to participate in classes that build technical and engineering skills. Currently, our team members are working diligently with the New Albany High School administration to develop a plan addressing these shortcomings.

To promote this Digital Eagles STEM Plan, our team presented during curriculum night, an event where thousands of students and parents decide which classes they will take the following year. Our team presented on the importance of STEM education, passed around pamphlets promoting STEM classes and FIRST at the school, and showed off our robot to demonstrate the power of FIRST to passerby. After seeing the successes of this presentation, the administrators at our school were excited to consider the prospect of expanding a robotics program further!

Curriculum Changes:

We are most excited about the prospect of using the Digital Eagles STEM plan to making a change that affects every single student in our district by altering the curriculum to have a greater focus on STEM. Starting next year, the robotics pathway at our school will be completely altered thanks to our team's lobbying efforts. Now, the program focus extends to metal fabrication, wiring, and various fields of engineering. Additionally, our school has begun to use the NAO robots purchased from a previous grant thanks to our use of these machines in a community-wide TEDx presentation.

We are preparing to present in front of the curriculum directors of New Albany High School next November. Team 5667 aims to offer more engineering classes and robotics classes, but also intends to alter current classes to better reflect a STEM workplace. We hope that many of the classes will emulate the example of FIRST Robotics Competition.

Mentoring in Columbus and Beyond:

Our team is dedicated to the development of creativity and ingenuity STEM brings. In an initiative to spread STEM and FIRST, we have assisted many groups teams in the founding and groundwork of their own FIRST teams. All in all, we have founded and helped develop 1 Jr. FLL program, 3 FLL teams (9813, 28742, 34554), and 2 FTC (13332 and 14320) teams in the greater Columbus area. In the last 5 years alone, 5 new FIRST teams have been established in the New Albany area, and our team has helped found and teach all of these budding new teams the skills necessary to become successful

Our team partners with other schools in the New Albany area, including the Columbus Jewish Day School Jr. LEGO League program and the Marburn Academy FTC team. Representatives of The Digital Eagles give presentations using our robot and teach classes to CJDS and Marburn Academy students. We cover topics like engineering, mechanical systems, and core values with these students. A highlight of this experience is the automatic high five machine the students created. These projects not only provided a hands-on project for the students who participate but also provide an accessible example of STEM for students to bring to their classmates and families.

Additionally, our team prides itself on spreading FIRST robotics outside of the country. The Digital Eagles went to Taiwan and worked with young Taiwanese students from broken and abusive homes. We taught these students about the basics of FLL and STEM and helped them create projects. Team 5667 taught them concepts like gear ratios and the core values of FIRST. In the process, we instilled in them a belief that they could achieve anything. Along the way, additionally, we met a sophomore FRC team, Savage Tumaz 6947, and mentored them. Specifically, we helped them with coaching, team structure, mentorship, and CAD/mechanical.

How We Give Back and Community Outreach:

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The Digital Eagles have a three-year relationship with Healthy New Albany, a local non-profit. As part of this relationship, we help to operate the New Albany Walking Classic in the fall, one of the largest walking events in the country, and the Kids Only Holiday Shop, where robotics students help local children learn about money management. Additionally, at the Healthy New Albany Farmers Market, we displayed our robot while helping set up and clean up the event. Lastly, our team created an ongoing relationship with the Village Coalition Against Hunger, a local food pantry connected with Healthy New Albany that serves many of our classmates and neighbors. For the fourth year, our team also presented our robot and STEM at the New Albany's Founder Day Parade and the following festival, one of the biggest local events.

Our largest fundraiser and outreach event is the annual NAHS Robotics Haunted House, which is featured in local magazines, online, and on 10TV local news. The haunted house provides scares, but also a fun introduction to STEM. We allow patrons to go behind the scenes on some of our team-made robotic props, such as our motorized gravedigger, slamming lockers, and our competition robot dressed to scare! These props provide patrons with insight about what our team and FIRST are about - education driven fun. This year, we had over 500 community members come to our haunted house, including the superintendent and assistant principal. The annual growth that our haunted house has seen is emblematic of an increase of our local presence.

The Digital Eagles, in conjunction with The Antidote (FTC team 14230), ran an FLL tournament. We assisted with multiple aspects of the competition by dedicating many volunteers to this event. The event was a huge success, garnering local media recognition and community commendation.

All in all, our team assisted and ran 10 local events throughout our community in the last 4 months.

Developing and Building a Diverse Community:

In the past year, our team made great strides in improving diversity and gender equality. This year alone, we increased the number of women on our team by 300%! Nearly half of all females on the team hold important positions as leaders. To continue the growth of our diversity, our team chooses to present at more inclusive events, such as Curriculum Night. In fact, nearly half of the students who signed up for more information about robotics at Curriculum Night were female!

Project management system:

This year, we instituted a completely new leadership system capable of adapting to any situation. This new system delegates tasks headed by peer mentors, and points of contact (POC), who manage the daily plans for specific subteams. We modeled this system based on Silicon Valley management systems and employed the help of a professional scrum master, which focus on smaller groups in which separate tasks are delegated to each individual. Using this system of accountability and communication creates many benefits; it improves participation, increases accountability, encourages individual complex thinking, and improves the efficiency of a task. Additionally, we completely eliminated the word lead to make every team member accountable as an individual.

Likewise, the team captain, project manager, and professional mentor all work together to intermesh the subteams' work. All completed tasks and setbacks are communicated by the POCs to the project management team. Using this information, the project management team records the tasks on our central Gantt Chart to formulate a consistent plan for the subteams to follow through with.

Long Term Impact on Students:

Our outreach not only benefits its recipients; it also impacts our members. Our members not only gain experience with the technical aspects of STEM, but they also improve their soft skills like public speaking, organization and time management, which are essential for success. 90% of our students report building new friendships through our program. Through our sponsorship toolkit program, every student is required to find sponsors for the team. This ensures that all team members will be able to talk to adults in a business setting.

Team Sustainability by Promoting FIRST:

The Digital Eagles' prioritize team sustainability and the importance of spreading the message of FIRST. Through fundraisers which promote STEM and the FIRST community, our team gets kids interested in STEM and FIRST while sustaining our team.

One of these notable fundraisers we run, the NAHS Haunted House, receives up to 400 people a weekend and raised over \$5,000 this year. We gain funding and get kids interested in STEM and FIRST by packaging robotics into a fun and accessible experience. Visitors come through for the haunted house and leave with a fascination for robotics.

All of our FTC and FLL teams act as location where we can find driven, experience and award-winning local talent. We also find a diverse group of new students through our curriculum night presentations and our ice-cream sale fundraiser.

Inspiration:

Our team is inspired to innovate and ignite a life-long passion for STEM. By overcoming challenges with teamwork, creative ideas, and trying what we never thought possible, we teach students them lifelong skills.

We are the Digital Eagles. We are more than robotics. We will soar to the stars!