



2009 CHAIRMAN'S AWARD ENTRY ESSAY

FRC 1712, now four years old, eagerly pursues the ideals of FIRST with a motto of "Designing on all Fours." With our four legs, Passion, Leadership, Perseverance, and Community, Dawgma strives to follow and spread the ideals of FIRST.



PASSION

For Dawgma, passion means "transforming curiosity into excitement." For the past two years, we have offered all of our members training in mechanics, electronics, and software/programming. This skill building is supplemented by lessons on FIRST and its principles.

This year, our newest sponsor, Lockheed Martin, provided us with two engineering mentors, Mr. Bob Bellini and Dr. Paul Gehman, who have given a great deal of their time to enhance our knowledge and skills. Together they have increased our ability to tutor students in robotics-related concepts.

At the '07 Philly Regional, our passion earned us recognition and respect from our peers and event judges. There, we received both a design award as well as an award from a fellow team. That momentum continued in '08 when we gratefully accepted peer awards and the Philadelphia Regional's Gracious Professionalism award. This recognition is feedback that lets us know our team is on the right track and the fuel we use to inspire our team and community.

Students continuously raise the bar by bringing their own passion to related projects. One member based his Eagle Scout project around our outreach program called "Portable Inspiration" (PI). The traveling package contains VEX robots, spare parts, a robotics game, and workshop materials. It is used with a wide variety of audiences to introduce STEM (Science, Technology, Engineering, Math) and FIRST ideals through hands-on experiences. Another student, inspired by the ideals of the Chairman's award, proposed an award for the Technology Student Association which has since been accepted by TSA on a state level. Five of our female students chose to spend their summers in various university engineering programs. Many alumni and current student members have similarly structured school projects around Dawgma by building robots, running 1712 events, and developing curriculum for an ethics-based leadership course for our school district.

By recognizing and fueling interest in FIRST we are feeding the passions of our members and maximizing 1712's efforts each year.



LEADERSHIP

1712 builds more leaders than robots. With the support of our mentors, Dawgma has seen many members reach their full potential. Students assume key positions which increase leadership skills. They must face challenging new situations, requiring responsibility to guide themselves and others through difficulties.

Using our demo robot "Runt," veterans train new members each season; introducing mechanical aspects with a hands-on experience. This benefits our new members and puts veterans in demanding leadership roles. Dawgma outreach also visits schools to conduct engineering and robotics workshops. These events demand preparation, resource development, training, and role model behavior.



Last fall a student member created, organized, and led a JrFLL Expo at an elementary school in our district. Fifteen teams presented their projects to judges and peers and experienced 1712's PI workshops. A team mentor also organized a second JrFLL Expo in another school district for twelve teams, introducing a new community to FIRST and creating new FLL teams. In all our JrFLL efforts this year have produced 27 new FLL teams and have embedded a community-based STEM event in two separate elementary schools in our county. From this example two rookie team members have begun helping an additional elementary school develop a technology club.

As always, Dawgma would be nothing without the help of our mentors. Our teachers, engineers, and alumni all work to develop the leaders of tomorrow from the FIRSTers of today. This produces confident and experienced leaders who are prepared to take on future challenges in FIRST and their own lives.



PERSEVERANCE

Nurturing a FIRST team and its members is itself a problem solving experience. The phrases "Design is an iterative process" and "culture change takes time" are well known expressions among our members. Since we began, 1712 has persisted through many challenges by building and preserving partnerships with fellow teams and our community.

From the beginning our school district has been steadfast in its support, financing our team and providing PR through the district website. Now



1712 is sought out by other schools to provide robotics education and training. Due to the growing interest in robotics education we have extended and revised our outreach efforts through PI to incorporate technology in elementary school classes in our area. Also, our two JrFLL Expos introduced over 100 students and their families to FIRST.

1712 members communicate with other teams, sustaining partnerships and forming friendships with other FIRST students. This year, a group of students from teams 709 and 484 organized a bowling trip for local teams from our area, including 1712 and 2234. These friendships lead to collaboration between teams to solve mechanical and programming problems.

Dawgma continues to share ideas and discoveries with others through ChiefDelphi, a website that connects FIRST members, alumni and mentors. In past years we have used their forums as an educational resource. Now, in year four, thanks to our elevated ability, we are able to return this help by assisting others. Our white papers include Inventor tips, robotics curriculum, chassis design, outreach efforts, award entries, and NASA grant writing tips. These papers have been downloaded over 2,200 times.

1712 has attended FIRST events including off-season competitions, kickoffs, FTC/VEX and FRC Regionals, and The Championship. Every competition provides an exciting learning experience as well as opportunities for individual and team growth. Due to the excitement generated by FIRST, 1712 grows each year. In two years the number of female participants quadrupled, and our retention rate has grown to 90%. Our alumni tend to gravitate toward STEM related careers and many return to mentor or volunteer in FIRST elsewhere. Partnerships and relationships of all kinds are the keys to the success of any team, new or old. Whether it is working together as a team or with others, we foster a mentality of "us versus the problem," rather than "me versus you."

COMMUNITY

Community service and outreach are the primary focuses of 1712, as the most important part of FIRST is helping others. Over the past few years Dawgma has gained great momentum in outreach activities. In the beginning we built crates for rookies, provided event volunteers, and performed 3D printing services for local teams. Now 1712 has an extensive list of ongoing activities.

Last year began with the birth of PI, which is now used with children, autistic students, and adults.

Recent events include a demonstration at the Philadelphia Video Game Expo, four regional elementary schools, and off-season FRC events. At schools teachers are given robotics-related learning materials, enhancing STEM activity while students play the PI game.





Participants learn about teamwork, simple machines, and our FRC/FTC teams. These demonstrations fascinate and cultivate passion in countless students and adults. At one workshop two young girls even asked for an autograph from a team member.

On a regional level, Dawgma has appeared on TV, in newspapers, and participated in Franklin Institute demos. Last year 1712 participated in the Harrisburg FIRST Day. Along with other teams, we spoke to state legislators, educators, and visitors about the program and its goals. There the combined efforts of the teams raised awareness of FIRST and what it does for students and their futures.

In October, we collaborated with our school's service club to collect 2200 lbs of books for team 365's annual book drive. In November, a 1712 member spoke with an organizer of the Philly Video Game Expo that resulted in a three-day FRC demo with teams 365, 357, and 341, exposing FRC to over 24,000 visitors.

Last year, two team mentors were keynote speakers at the state TechEd conference; they highlighted robotics education with a social conscience and "coopertition." An article they wrote appeared in the TEAP (Technology Education Association of Pennsylvania) journal and The Technology Teacher, a national journal. A version of this article was later featured on TSA's website, exposing TSA membership to FIRST. We have informed upwards of 200,000 people of PI and FIRST ideals- our outreach program was even featured in the FIRST newsletter.

Globally, this year began with two outreach efforts. Over the summer, FRC 365 gave us the chance to partner in a day-long robotics workshop for the Ulster Project that brings together Protestant and Catholic Irish students. Using a playing field and game from our school's VEX-based robotics course, small groups of students, aided by 1712 and 365 members, competed, cooperated and learned FIRST ideals. The participants loved it, one exclaiming, "It was awesome! It is probably one of the best days on the project."

Dawgma also supports Engineers Without Borders. Chapters of EWB work in underprivileged areas of the world, designing and building structures to sustain local life. This fall we began raising money for the Drexel and UPenn chapters of EWB to fund their projects. Our dedication to community service has spread contagiously. Our members, mentors and community all benefit from our collective efforts and energy as we continue to work towards building a better future.

CONCLUSION

Though 1712 has come far, we're still in the beginning of a long process. Dawgma is continuing on its journey of creating positive community and culture change. With inspiration from other teams, mentors, Chinese food, and each other, we look forward to the day FIRST's mission is fully achieved.



2009 CHAIRMAN'S AWARD ENTRY EXECUTIVE SUMMARY

Briefly describe the impact of the FIRST program on team participants with special emphasis on this year and the preceding two years

Growing yearly with a 96% retention rate, 1712 pushes students to take part in FIRST robotics and its ideology. The number of female members has quadrupled in two years, and 5 female students chose to spend their summers at various engineering programs. We teach each other and the community, and many students have created ways to use and spread FIRST in school projects. One member used our outreach program for his eagle scout project. 1712 has changed students' passion, confidence, and future.

Examples of role model characteristics for other teams to emulate

1712 takes pride in our passion, leadership, perseverance, and community. Students can always be found working or helping others and with leadership positions, they become responsible problem-solvers. The team founded two JrFLL events at local elementary schools. We've received recognition from peers, judges and sponsors for our community service, outreach, and curricular integration. Our goal is to continue to spread our ideology within and outside of FIRST.

Describe the impact of the FIRST program on your team and community with special emphasis on this year and the preceding two years

FIRST has influenced our team to reach out to our community. Our outreach efforts this year have resulted in the creation of 27 JrFLL teams and two events. This summer we participated in 365's Ulster project day, which brings together protestant and catholic students from Ireland and expose them to robots and team building. We also were a part of Harrisburg FIRST day last fall, which introduced many state legislators to FIRST. Dawgma is constantly working to increase our community efforts.

Team's innovative methods to spread the FIRST message

Last year we developed an innovative program called Portable Inspiration (PI) to help spread the FIRST message and make it even more accessible. PI uses four VEX square bots and basic starter kits. We've used PI with autistic kids and younger students. 1712 has taken it to FRC off-season events, the Philly Video Game Expo, and the Franklin Institute. PI has also been used in multiple STEM workshops at local elementary schools and featured in national publications.

Describe the strength of your partnership with special emphasis on this year and the preceding two years

1712 has formed partnerships with sponsors, district, community members, and other teams that have strengthened us and caused growth. Not only do we collaborate with another technology club in our school for fund raising and outreach, but this year we also teamed up with a service club to collect almost 2200 lbs of books for 365s book drive. We have developed and encouraged an "us versus the problem" rather than a "me versus you" mentality.

Team's communication methods and results

1712 communicates with our team, other teams and our community. Our team meets after school and communicates electronically, making our team organized and efficient. On ChiefDelphi forums team members talk with and help other teams. We've posted multiple documents meant to help others and they have been downloaded over 2000 times. Two years ago our team was featured on a local TV news program. This year our efforts have been featured in school and local papers, as well as two TechEd journals.

Other Matters of Interest to the FIRST judge, if any

FRC 1712, now four years old, eagerly pursues the ideals of FIRST with a motto of "Designing on all Fours." With four legs; Passion, Leadership, Perseverance, and Community, we strive to spread the words of FIRST. 1712 has come far, but we're still beginning a long process. We are continuing on a journey to create positive community and culture change. With inspiration from other teams, mentors, pizza, and each other, we look forward to the day when FIRST's missions are fully achieved.