2008 Chairman's Award Entry Essay

Now in its 3rd year, FRC 1712 pursues the goals of FIRST's mission in truly meaningful ways. Inspired by other teams and with a motto of "Designing on all Fours," Dawgma is fully guided by four principles. Passion, Leadership, Perseverance, and Community are the legs upon which we stand.

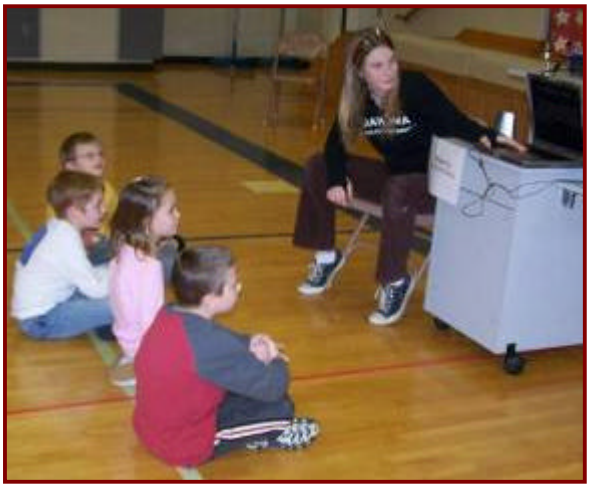
Passion

To us passion is "transforming curiosity into excitement." We pride ourselves in our ability to recruit new team members with related interests and hook them on our beliefs, principles, and collective energy. This year we began with our mechanical rookies taking apart and rebuilding our training robot Runt in order to convey the mechanical side of FIRST, showing them building robots is both interesting and accessible. We also offer our new members with specific interests software training in Inventor, 3DS Max, and EasyC, as well as electrical/electronics training. All of the training we do is meant to excite and motivate new members. Along with this technical skill building, training also includes an introduction to FIRST and its principles, along with an emphasis on teamwork.

At the 2007 Philly Regional our passion and excitement for the program earned recognition and respect from our peers and event judges. In addition to receiving an award from a fellow team and a design award, a potential sponsor approached us for the first time at the event and expressed interest in helping us, leading to a community partnership that enables us to spread our message of innovation and design with a social conscience to the community this year.

Last year Dawgma incorporated an intermediate level team to its ever-growing family. This year because of the amount of interest and excitement for the design process it was necessary to have two FTC teams in order to engage all interested students. With veteran team members coaching FTC, not only does this translate to more team members, but it also allows more students to be leaders.

Since kickoff 2008, we've had students more interested in programming than ever. To capitalize upon that interest, the group has been using Runt this build season to train, program, and wire the IR board for the 2008 FRC game Overdrive. By simply recognizing and feeding that interest, the resulting passion has augmen,ted productivity, raising 1712's programming efforts to an unprecedented level.



Leadership

1712 exists to develop leaders. Veteran students pass on their knowledge and skills to others, changing students' lives in the process. "After being involved with FIRST," says one rookie, "I know for certain that I want to continue on as an engineer."

Using Runt, a training robot created for a senior project, veteran students trained new members for the '08 season, introducing robotics concepts, hardware and tools, drive train assembly, and electronics. This not only benefits our new members, it puts veterans in leadership and training roles that require responsibility and patience too. One student led a series of lessons teaching Inventor to rookies. Dawgma outreach also visited schools and conducted engineering and robotics workshops in a variety of settings. These events demand preparation, resource development, and training, while also encouraging students to act as role models.

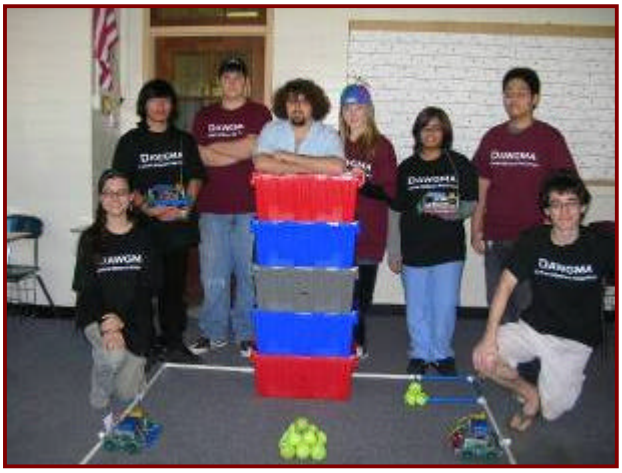
Dawgma mentors are also a source of leadership. Teacher mentors include: Gene Guay, a physics teacher and automation industry veteran; Mark Piotrowski, a tech-ed teacher and TSA advisor; Rich Kressly, a former FIRST Senior Mentor; and Katie Cooper, a computer science teacher whose programming knowledge greatly enhanced the team's skills. 1712 college mentors are: Mike Williams, a senior at Saint Joseph's University and former member of team 103, who has contributed his time and experience as well as spearheading an effort to involve his fraternity as a donor; Zac Cohen and Alex Flaxenburg, former student members of 1712 who assist with field component procurement as well as manufacturing and training; and Sean Lavery, a Drexel MechE student and former team 116 member, who has added a great deal to our design process in FTC and FRC. 1712's mentors provide strong leadership examples to follow and put students in key roles that help them all develop leadership skills.

Perseverance

Growing a FIRST team in the community is a lot like building the robot itself. Design is an iterative process and culture change takes time. However, we have discovered that with an opportunity to be exposed to FIRST, others quickly see its value. The year-round partnership effort of team 1712 is reflected through a variety of activities in the school, local, and global communities. Since we began three years ago 1712 has persevered through many challenges, building partnerships to overcome these obstacles.

After a year of planning prior to our rookie season, our school district and administration has been steadfast as our primary financial supporter. LMSD also provides PR for our efforts through the district website. Today, team 1712 is sought out by schools and staff across the community to provide robotics education, support, and training. In Dawgma's first year, three weeks of build season were spent just to construct a moving chassis. Through partnerships with other teams, in house training, and better relationships with suppliers and sponsors, our knowledge and ability improved. This year (year three) we needed only three days to finish a moving drive base.

Dawgma has continued to attend FIRST events over its three years of existence including off-season events, kickoffs, FTC 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, has a 96% retention rate, and sends graduates toward related careers. When faced with programming or electronics problems beyond our skills, members of 1712 contact other local FIRST teams or seek help on ChiefDelphi for assistance. Now, in year three, we are able to assist others more regularly. Partnerships and relationships of all kinds are the keys to success. Whether it's working together as a team or with other teams, we've developed a culture where it's an "us versus the problem," rather than a "me versus you," mentality.



Community

This year Dawgma has drastically improved its outreach efforts. September was the birth of our flexible robotics program, Portable Inspiration (PI). Using the Vex platform we have created an adaptive program that provides opportunity for diverse groups to be introduced to the importance of technology, engineering, and design. PI has been used to inspire others in our community and beyond. From autistic to gifted classes in our school, at the workplace of one of our sponsors, a demonstration at an off-season FRC event, and a workshop for 125 second graders, we've been able to conduct simple demos and in-depth workshops that have cultivated meaningful interest in hundreds of students and adults.

Since our inception, we've also learned from and given to the global community. Through the ChiefDelphi forums we share what we learn, often publishing whitepapers. The papers include Inventor tips, robotics curriculum, chassis design, outreach efforts, and award entries. While still a young team with much to learn, there have been over 1,000 downloads of these resources to date. Locally, we've built crates, provided event volunteers, and performed 3D printing services for area teams. Further promoting FIRST's ideals in popular culture, this year

a team member who also serves as Technology Student Association (TSA) state officer has submitted a state proposal for a TSA Humanitarian Award, a Chairman's-like award, which is now under consideration for adoption.

Previously, Dawgma has made appearances on television, in newspapers, and has participated in Franklin Institute demos. In October, 1712 was one of the teams that participated in Harrisburg FIRST Day. With other teams, we spoke with state legislators, educators, and visitors about the program and its goals. As a whole the combined team efforts made a huge difference as we were able to help raise awareness of FIRST and what it does for students and our culture.

Two lead team mentors have been able to build community and awareness as well. In November, they were keynote presenters at the state TechEd conference highlighting robotics education with a social conscience and Coopertition. While there, they were also awarded the 2007 Dr. Andre Nevin Award for outstanding TEAP journal article written on the same subject. The article will also be published in The Technology Teacher, a national journal, further widening the impact.

In December, 1712 took PI to Marlborough Elementary School. Conducting a full day workshop that saw every second grader operate a Vex robot in an alliance-style game, the students went through stations in small groups to learn about robots in our world, teamwork, simple machines, and our FRC/FTC teams. Two young girls even asked for an autograph from a team member. All teachers were also provided with learning materials for their classrooms, enhancing the STEM activity.

Ongoing community activities for our team include demonstrations by our female students at a women's fitness club, fundraising with Hexbug and magnet sales, gift-wrapping at Borders, and raffles. Since our team is also a part of the LMHS Technology and Engineering Club, with a total membership of 100+ students, we are able to spread FIRST ideals to students well beyond our team roster. This also allows for direct support of the club's new and growing parent-booster organization.

Conclusion

Realizing there is still much to accomplish in coming years, 1712 has begun the long journey of creating positive community and culture change. By feeding on the inspiration other teams provide and by "Designing on all Fours," we look forward to the day FIRST's mission is truly achieved.

2008 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. With leadership positions, students become responsible, innovative, and experienced. As well as teaching each other and the community, many create their own ideas to spread our ideology. 1712 has changed students' passion, confidence, and future. "After being involved with FIRST," says one rookie, "I know for certain that I want to continue on as an engineer."

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 in our tech lab. Outside of the workroom, students create innovative ideas, from outreach programs for autistic and elementary kids to proposing Chairman's-like awards to other programs. To use Gracious Professionalism, 1712 consistently shares ideas and questions with others via ChiefDelphi. 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 create ideas to reach out to our community. Our Portable Inspiration inspires elementary and autistic kids with simple games. Demonstrations in public places, such as Curves, help spread the word of FIRST to raise awareness throughout our community. Trained teachers provide robotics in the district high schools as well as gifted classes in our middle schools. Dawgma is working to increase our community efforts as more ideas from our students are put forth.

Team's innovative methods to spread the FIRST message

This year we developed an innovative program called Portable Inspiration(PI) to help spread the FIRST message and make it even more accessible. PI fits in a small car and uses four Vex square bots and other materials. We've used PI with autistic and gifted students in our school. 1712 has also taken it to an FRC off-season event and visited a local elementary school where we presented robotics and engineering concepts to six classes of second graders, putting a controller in each kid's hands.

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. Two years ago it took us three weeks to build a moving chassis, this year it took three days. Traditionally, two clubs in one school centered around engineering would be competitors. At our school, we partnered with our school's TSA chapter and formed one club. We have developed and encouraged an "us versus the problem" rather than a "you versus me" mentality.

Team's communication methods and results

1712 communicates with our team, other teams and our community. On ChiefDelphi forums team members talk with and help other teams. We've posted multiple documents meant to help teams and they have been downloaded over 1000 times. Our team meets after school and communicates electronically, making our team more organized and efficient. Last year our team was featured on a local news program. We also communicate with our community through our district website and school newspaper.