Briefly describe the impact of the FIRST program on team participants. *

(500 characters allowed)

FIRST's positive impact on the members of Team 358 is threefold. Students learn how to perform specific tasks, such as using tools and the process of designing and building a robot. More importantly the FIRST robotics program has taught skills that will be useful in pursuing careers not only in science and technology but other fields as well. Finally, students learn, through goal-oriented discussion, how to access a design's viability with respect to strategy, time and budget.

Examples of role model characteristics for other teams to emulate. *

(500 characters allowed)

Team 358 is a role model in many respects, especially in the way that we mentor fellow teams in need of help. During the 2004 through 2006 seasons especially, members have taken time out of Team 358's schedule in order to help those teams on Long Island lacking support and those that are not experienced. Team 358 members will be in attendance at another team's meeting to lend a hand. We share our knowledge by explaining robot aspects, helping with design, and promoting the concepts of FIRST.

Describe the impact of the FIRST program on your team and community. *

(500 characters allowed)

Our robots have become a familiar feature of many school events. These include Homecoming; Safe Halloween; and the middle school science fair, where our robot is put on display to spark student interest in FIRST. In addition, we sponsor an oldies concert which has always sold out. Two elective robotics classes have been added to the high school curriculum. The middle school also sponsors a FIRST Lego League, team which visits Team 358 a few times during each season.

Team's innovative methods to spread the FIRST message. *

(500 characters allowed)

The concepts of FIRST are explained at all community events in which Team 358 participates including Safe Halloween, and Homecoming. In addition, Team 358 attends the I-CON science fiction convention which has over 6,000 attendees. Team 358 also participates in events created to spread the word about FIRST, such as the SBPLI fundraising dinner for potential sponsors, as well as events at Northrop Grumman Corporation and FESTO to interest employees and new schools.

Describe the strength of your partnership. *

(500 characters allowed)

Team 358 has maintained a close relationship with FESTO, our corporate sponsor, during our participation in FIRST. Although engineers from FESTO help design the robot, students participate in both the planning and building of the robot. FESTO also provides some advanced machining capabilities to Team 358 that would not be available to us otherwise. FESTO has taken its participation further by allowing several students to intern. In addition, FESTO offers two scholarships to members of Team 358.

Team's communication methods and results. *

(500 characters allowed)

There are many methods of communication between the members of Team 358. These include an extensive email system connecting both students and parents. The team website lists all meeting dates and times, as well as providing the documents from meetings. The website also includes a forum where topics from meetings can be discussed. The Parent Booster Club sends out periodic mailings to keep parents informed and involved. Meetings follow an itinerary to insure that topics of importance are covered.

Other matters of interest to the FIRST judges, if any. *

(500 characters allowed)

While preparing for the 2006 season, Team 358 was given the opportunity to participate in a real engineering exercise. We helped Northrop Grumman Corporation design a new mechanism for in-flight refueling of jets. Team 358's 2005 robot was modified and used to test a design for extending the fueling probe, our arm on the model. Members from Team 358 had the opportunity to visit some of Northrop Grumman's facilities to meet those involved in the project we had helped with.

Essay

(10,000 characters allowed)

Seven years of experience in the FIRST robotics program has helped to make Team 358, the FESTO/Hauppauge Robotic Eagles, successful both on and off the playing field. With

the support of our corporate sponsor, FESTO, and the dedication of our members we have been able to create a team in the image of FIRST.

Team 358 has been involved with mentoring many other Long Island teams in the hope of passing on experience to other teams and spreading the message of FIRST. There are many levels of assistance provided by Team 358, including traveling to other schools to help, allowing other teams to come to our workshop to use our tools, and providing help over the phone or online. Some of the teams mentored in the past by Team 358 include 810, Smithtown High School; 527, Plainedge High School; and 1468, Hicksville High School. Last year, with the large influx of FIRST teams on Long Island, Team 358 managed to mentor multiple teams including 1537, Uniondale; 1607, Roosevelt; 1606, Levittown; and 1546, Baldwin. This year Team 358 has mentored two rookie teams: 1803, Port Washington, and 1808, Freeport. In addition, a mechanical engineer who wished to start a team in Huntington shadowed us last year in preparation for starting a team this year (though that team has not materialized yet). As a mentor we try to act as a guide to teams: explaining the spirit of FIRST, offering advice and machines, yet not doing the work for other teams. Although mentoring takes a large portion of time during both the build and competition seasons, it is a welcome opportunity for Team 358 as it gives us a chance to meet our peers and spread the FIRST program. For instance, once we found out that Team 263, Sachem, would be unable to participate in FIRST this year, we invited any students who had been part of Sachem Robotics last year to join our team. Also, if the school districts of the engineers who help us do not have robotics teams and if their children wish to be involved, they are welcomed to join our team.

Helping a rookie team start up is rewarding, but Team 358 does not just leave a team to fend for itself after a year of mentoring. We continue to develop a relationship and watch them grow. This year in particular Team 358 has been offering support to many other teams. Our programmers have helped multiple teams with sensors, such as gyros and the CMU camera, including 564, Longwood; 810, Smithtown; 1606, Levittown; 353, Plainview and 417, Mount Sinai. We also continue to mentor 1607, Roosevelt by providing machining capabilities, of which they have little.

Although mentoring teams during the build season is important for their continued success, teams often have problems during competitions. Team 358 has consistently offered whatever support possible to other teams during competitions, from programming to pneumatics or even just offering spare parts. In programming we have developed basic autonomous modes for robots that did not have them because of a lack of programmers. In particular, at the 2003 Nationals, Team 358 helped Team 1396 to program a robot that did not exist until the day of competition, because of a shipping error. We consider offering such help to be part of what it means to spread the message of FIRST.

In addition to mentoring, throughout the past few years workshops have been held by Team 358 members in order to educate other teams on specific topics. For example, last year an aluminum welding workshop was held for Team 810, Smithtown. More recently, a workshop was given in collaboration with Hofstra University on the autonomous use of sensors in robotics; over sixty people from eleven teams attended. In addition, a

mentoring CD was developed by one of Team 358's advisors in order to act as a guide for new mentors. It includes documents on pneumatics, programming, sensors, control systems and electronics. By sharing information we hope to help other teams reach their full potential. Other workshops focused on how to use the infrared sensor. Each workshop is available afterwards on our team website for anyone to view.

Beyond Team 358's commitment to mentoring, we look for additional ways to spread the message of FIRST. Team 358 often attends off season events in order to gain publicity, not only for ourselves, but also for the FIRST program. By participating in these we hope to involve more schools, sponsors and mentors. Over the past few years Team 358 has been involved in demonstrations at Northrop Grumman Corporation to interest new schools and to encourage their employees to mentor teams. Team 358 also participated in 2005 in a SBPLI fundraising dinner in an attempt to gain funds and recognition of FIRST on Long Island. Our robot, as well as a video of our robot at the Long Island Regional, was showcased to potential sponsors. In addition, ours was one of a few teams running a booth at a local science fiction convention, I-CON, in order to spread the word of FIRST to the over 6,000 attendees. Often our robot is used as a static display, a real example of what high school students can accomplish in the FIRST program. In addition Team 358 participates in many community events, including Homecoming, where we march in the parade with the robot and have had our robot featured in the half-time show, and Safe Halloween, a protected environment for children to trick or treat. In order to get younger students interested in science and technology, Team 358 visits our middle school's science fair each year where we have at least one working robot on display. In addition,

we have visited the elementary schools to reach even younger students. For both fundraising and publicity purposes, we have an oldies concert (which has always been sold out) in order to expand the concepts of FIRST to senior citizens, a demographic typically thought to be uninterested in robotics. Often seniors have many questions and show a strong interest which may help spread the word of FIRST throughout the greater community. Although attending events is important in spreading the word of FIRST, it is also important to guide other teams in the process of expanding FIRST. One of the advisors of Team 358 has written a lengthy manual on publicizing FIRST teams, available to anyone on the team website. In addition, many other documents have been made available on the Team 358 website to help other teams as much as possible.

FIRST has had a large impact on the members of our team through the years. A former president of the club chose to major in medical engineering at Emory University in Atlanta, thanks to experiences in the FIRST program. Even students who join with no intention of touching the robot learn about science and technology. A wide range of talent is represented by Team 358, including artists, writers, videographers, and more. Those without technical talent are perceived as just as valuable as those who work directly on the robot. Often those with other talents are enlisted in helping design and build the robot. From this, everyone in the club learns how parts of the robot work or how to use tools. By having a wide range of talents and personalities on the team there is more potential for a variety of design ideas to develop. Discussions and brain storming sessions about the positives and negatives of each idea produce superior designs and the team work necessary to implement them.

Students from the middle school are introduced to FIRST by participating in the FIRST Lego League. Not only do they participate in the Lego League, but middle school students are invited to come to the high school robotics club and to the Long Island regional in order to learn about the FIRST program. While in the robotics room these students are taught how parts of the robot work and what FIRST is about.

Without our sponsors and mentors Team 358 would be unable to participate in FIRST Robotics. FESTO, our corporate sponsor, has had a major impact on our program. The engineers, as well as mechanically-inclined mentors, provide excellent guidance. They help the students to discover what is possible in FIRST Robotics. In addition, the engineers explain concepts to us so we learn how and why something works, not simply that it works. In addition, by working with the mentors we are able to learn about what being an engineer is. Often if a part is too complicated, or needs to be more precise than we are able to make ourselves, FESTO will provide us with the machining capabilities necessary to make it. For example, last year our arm had dozens of holes in it to lighten it. In order to make these holes we needed to use a milling machine, FESTO made it possible for us to use that part by milling the holes for us. This year FESTO helped create our gear box for a ball shooter by making plates to hold our bearings and motor that were precise within thousandths of an inch. Although FESTO does create some parts for us, these parts are always assembled by the students and the process behind them is always explained.

In addition to working on the robot with FESTO, they have offered other benefits to team members. Multiple members were able to intern at FESTO working with engineers and technicians on computer systems, doing CAD work or working with machinery. Seniors from our team were given the opportunity to receive a scholarship from FESTO exclusively for those involved in the FIRST robotics program.

During the past few years Team 358 has put a large effort in to promote the concept and spirit of FIRST. From working with rookie teams, or any team that needs help, to strengthening interest in robotics and the Lego League, Team 358 has helped to spread and promote the message of FIRST. In years to come, we expect that our team will remain strong, become more involved with helping other teams, and introduce more students to the fields of science and technology and the FIRST ideals--leadership, teamwork, “gracious professionalism” and volunteerism.


GENESEO
D.J.
PLATINUM
ENTERTAINMENT
D.JS • M.CS • Dancers