FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY

FIRSTawards

Chairman's Website Woodie Flowers

FIRST®

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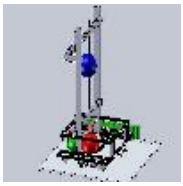
Below is the entry you submitted for the Chairman's Award. You may log in and view it at any time.

Event: **Los Angeles Regional**
Submitted: 02/19/2009

Your Team Number:	980
Team Name, Corporate / University Sponsors:	NASA-JPL/Alliance Spacesystems/Solutions for Automation/Crystal View Corp./Neighbors Empowering Youth & Delphi Academy & South Pasadena High School

Briefly describe the impact of the FIRST program on team participants with special emphasis on this year and the preceding two years.	Team 980 uses the FIRST experience to expose students to a team based, engineering design process through a full product development cycle that is common to a wide range of industries. The team members go through this process in a way that they can understand and apply hands-on learning and the benefits of elegant but simple designs. Through commitment, a strong work ethic and a supportive environment the team has become an emerging leader in our community and the FIRST organization.
Examples of role model characteristics for other teams to emulate.	Team 980 mentors demand our students meet professional standards by emphasizing the importance of careful planning, paying attention to detail and persistence. Our students thrive in this environment, accepting the challenge of the tight schedule and constraints, while learning a great deal about design, fabrication, assembly, and testing.
Describe the impact of the FIRST program on your team and community with special emphasis on this year and the preceding two years.	Team 980 students learn technical problem-solving skills as well as time and project management techniques, life skills that profoundly impact career choices for our students. Most importantly, with the help of Team 980, FIRST has helped develop members of Team 2404 into motivated and caring students. We produced over 100 “Lunacy” game pieces for the Los Angeles SCRRF Pre-Ship event, which enabled the event to be held.
Teams innovative methods to spread the FIRST message.	Team 980 has always been an open team; that is, not based in a single-school environment. Our team comes from a variety of schools, both geographically and academically diverse from large public high schools to home-schools. We attract students who would otherwise be unable to benefit from FIRST. Our goal is to inspire those schools to start their own teams. Team 980 participates in the Lockheed Martin “Space Day” event held at an underprivileged elementary school in Riverside.
Describe the strength of your partnership with special emphasis on this year and the preceding two years.	Team 980 mentors are great at guiding students. They take the time to explain the aspects of design and utilize student input. Team members are urged to ask questions to better understand the task at hand. Using both the experience of the mentors, and the lessons of past experiences, 980 robot-builders are well equipped to handle engineering challenges with the right attitude and craftsmanship. Our professional mentors each have at least four years of experience as FIRST mentors.
Teams communication methods and results.	In the 2009 season, we increased the number of students and their involvement, sponsor engagement and community visibility. Team 980 utilizes group e-mail, website, brochures, word-of-mouth and demonstrations to communicate the FIRST message to students and the community. A marketing brochure created by a student was instrumental in attracting Boston Scientific as a major sponsor. Student members work on our website, publicity and team imagery as well as the robot.
Other matters of interest to the FIRST judges, if any.	Team 980 has a tradition of excellence in FIRST as a serious competitor, winning three regional events and seven technical awards. In the past two years, Team 980 has become more active

Images:



in community outreach through our efforts to develop a strong FIRST team at John Muir HS and volunteerism at FIRST events. We are a relatively small group of people from different academic backgrounds who have built a successful team with no initial funding, location, or other resources from a school.

Impact of the FIRST Program on Team 980 Participants

Team 980 uses the FIRST experience to expose students to the engineering design process. We follow a structured approach to create a robot that is both simple and highly capable. Our student participants experience a full product development cycle that is common to a wide range of industries, but compressed to a six-week timeframe. Our team's strength lies in our experienced engineering mentors who guide our students through the process of building the right robot the first time. After the Lunacy kick-off, when every bit of our being is anxious to start building something, we engaged in strategic brainstorming and defined the capabilities of the robot. As valuable build days seemed to simply evaporate, we transitioned from the design phase to creating innovative designs and using rapid prototyping to weed out impractical concepts. Throughout this process, we were challenged to simplify designs without giving up capability. This challenge inspired creative, active involvement by the students in the design. By the time the students started to "cut metal", our design details were much clearer and we sensed we were building the right robot. The anticipation of rapidly assembling the machine was tempered by the experience of our mentors. The mentor-student interactions, unique to FIRST, quickly improved the proficiency of students in fabrication and assembly. As we struggled in the last weeks of build season to get our robot assembled and tested, we learned the value of good problem-solving skills. The mentors would allow us to explore solutions, but knew how and when to guide us toward a productive path. The students of Team 980 developed an appreciation of how a disciplined development approach leads to a simple, effective design and quality product.

Role Model Characteristics for Other Teams to Emulate

The experienced mentors of Team 980 create a very professional environment for our small team to function at a high level of performance. Students experience first-hand, the real-world of engineering development where expectations are high and dedication is valued. The mentors demand our students meet professional standards by emphasizing the importance of careful planning, attention to detail and persistence. Our students thrive in this environment, accepting the challenge of the tight schedule and constraints, while still learning a great deal about design, fabrication, assembly, and testing. In the spirit of Gracious Professionalism, Team 980 reaches out to other teams in sharing our knowledge and experience. We spread our principles of keeping designs and fabrication methods simple with other FIRST teams. In the pits, we often assist teams in repairs or modifications to their robots. Inspectors will sometimes direct rookie teams to us for advice, which we happily share. We generally bring bench-top power tools, such as a band saw, drill press and small belt sander to competitions and will allow other teams to use these tools. Team 980 mentors often volunteer at FIRST competitions as robot inspectors and/or referees. We strongly believe in FIRST and we are active in growing the program. In 2008, we introduced the FIRST Robotics Competition to John Muir High School in Pasadena. We assisted an after-school program leader in registering a team and obtaining a NASA/JPL grant to start Team 2404. We continue to assist in mentoring this team, who received the "Rookie Inspiration Award" at the 2008 Los Angeles Regional.

Impact of the FIRST Program on the Team and Community

Team 980 students also learn technical problem-solving skills as well as time and project management techniques. These are life skills that profoundly impact career choices for our students. This past year, Team 980 also resurrected the school's abandoned machine shop to create the robotics fabrication lab. Both Team 980 and Team 2404 are benefiting immensely from use of the machine shop as a result. The school may reconsider its plan to eliminate the machine shop thanks to Team 980's effort in demonstrating its value to the school district and community. Also this year, the parents of one of our students created kits for Lunacy moon rocks to sell to the FIRST community. The kits grew from the concept developed by GUS (Team 228), with some of the more tedious efforts (fabric tube production, cutting of lexan strips and a different joining method) addressed in the kit. Another Team 980 student learned valuable lessons in leadership by organizing a group of Team 2404 students into a Lunacy ball assembly line. Over one-hundred "moon rocks" were produced and delivered to the SCRRF Pre-Ship event, which enabled the event to be held. In 2008, our lead mentor joined the advisory board for Engineering and Environmental Science Academy at John Muir HS. This mentor has no children in high school, but believes that serving on the advisory board is a way of giving back to the school for allowing Team 980 to utilize their space. Most importantly, with the help of Team 980, FIRST has helped develop members of Team 2404 into motivated and caring students.

"My first week here, I didn't even know how to set up a drill. A teammate helped show me how to and I really appreciate it." – 980 student
"I've gained the ability to set out and finish a difficult task." – 980 student

Innovative Methods to Spread the FIRST Message

Team 980 benefits from an unusual composition of student members. Since its inception, Team 980 has been an open team; that is, not based in a single-school environment. We recruit students from several nearby schools and varying educational environments. The experience emulates a real-world job project because we meet as strangers and leave as partners judged solely on the quality of our work and our attitude towards the process. Our current team has students from South Pasadena HS, Burroughs HS, Polytechnic School and La Canada HS. In the past two years, we've also had home-schooled and small learning academy students participate on our team. Thus, we attract students who would otherwise be unable to benefit from FIRST. Our goal is to generate sufficient interest in these schools that they consider starting their own new Team. Team 980 will gladly assist these schools in creating new teams and will work to locate mentors for them. As an outreach activity for elementary school students, Team 980 participates in the Lockheed Martin "Space Day" event held at an underprivileged school in Riverside. In this

event, students are shown the excellent career options afforded by a good education. For the past six years, our robot demonstrations have been very popular and attracted over 500 students each year.

The Strength of Partnership

Team 980 mentors are great resources for guiding its student members. Our mentors are professionals with background in mechanical, systems and software engineering, spanning the breadth of knowledge required to build effective robots. These professional mentors have at least four years of experience as FIRST mentors. We also have returning students to serve as fabrication mentors, assisting new students in basic fabrication and assembly techniques. One of the key elements of the Team 980 robot is the emphasis on a design can be built with simple hand tools, a drill press and a band saw. This makes our designs easily transportable to any FIRST team. All of our mentors take time to explain design concepts and seek student input at every level. Our sponsors, Boston Scientific and NASA/JPL, enthusiastically support the FIRST program because it represents the catalyst for creating a highly-skilled future workforce. Team members are urged to ask questions to better understand the task at hand. The diverse educational experiences of the students on Team 980 provide a unique environment for growth. As a result, our students are able to handle engineering challenges with creativity and enthusiasm.

"What keeps me coming back is seeing that spark that occurs with the kids when they go from knowing about something to being able to use and apply it." - 980 mentor.

Communications Methods and Results

Team 980 utilizes group e-mail, website, brochures, word-of-mouth and demonstrations to communicate the FIRST message to students and the community. At the start of the year, we distributed program informational materials and sign-up forms to students and parents. In the 2009 season, we increased the number of students and their involvement, sponsor engagement and community visibility. A marketing brochure created by a student was instrumental in attracting Boston Scientific as a major sponsor.

"Last year at the LA Regional, we saw a future Rookie alliance partner with a robot in pretty bad shape. The whole team went over there and helped them fix it up so that they could have a good time and see their robot perform. That made me feel pretty good. It also helped us against the Beach Bots, our traditional rivals. We were better competitors for helping out our teammates, not working against the opponent, so that was really cool." – 980 student
"I love how the kids learn to believe in themselves." – 980 mentor
"I've realized that it's great to win awards and trophies, but the real trophies to be proud of are the students." – 980 mentor

Other Matters of Interest

Team 980 has a tradition of excellence in FIRST as a serious competitor, winning three regional events and seven technical awards. In the past two years, Team 980 has become more active in community outreach through our efforts to develop a strong FIRST team at John Muir HS and volunteerism at FIRST events. We are a relatively small group of people from different academic backgrounds who have built a successful team with no initial funding, location, or other resources from a school. We hope to see young people become leaders who know that science and technology can make a difference in the lives of millions.

This entry was submitted towards fulfilling the Nasa Grant requirements.

By entering my name below, I agree that I have read my teams Regional Chairman's Award submission and have personal knowledge that the statements and claims made are complete and accurate.

Team Captain / Student Representative : David Michael Goldstein
Team Mentor : David Brinza

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