

**DYNAMITE ROBOTICS**  
**ROOKIE ALL STAR AWARD**



**Team Number: 2819**  
**Team Home: Oxon Hill High School**  
**Prince George's County Public Schools**  
**Robot Name: S.A.M. (Super Awesome Machine)**

Team Number: 2819  
Regional Selection: Washington DC Regional

## Executive Summary

Team Name: **Dynamite Robotics**

Corporate/University Sponsors: **BAE Systems, NASA, National Society of Black Engineers Alumni Extension Chapter of Washington, DC (NSBE-AEDC)**

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2008/2009 year and the preceding two years (500 characters allowed, including spaces and punctuation)

**FIRST encourages a positive learning environment for all students. It has expanded our science and technology program by introducing the fundamentals of robotics. FIRST has encouraged participation from a diverse group of students. Oxon Hill High School uses FIRST to integrate a hands-on approach to learning into the existing curriculum. FIRST reinforces current initiatives such as community outreach, peer tutoring, extended day programs.**

**Examples of role model characteristics for other teams to emulate (500 characters allowed, including spaces and punctuation)**

**Oxon Hill High School has a Technology Education department, and we encourage our Production Systems, Energy/Electronics, Engineering Foundations, Tech Systems and Tech Graphics instructors to serve as mentors for our team. Members of the National Society of Black Engineers Alumni Extension Chapter of Washington, DC have volunteered as mentors for our team. We appreciate the opportunities to work with local, veteran teams and attend workshops in order to learn from the experiences of our peers.**

**Describe the impact of the *FIRST* program on your team and community with special emphasis on the 2008/2009 year and the preceding two years (500 characters allowed, including spaces and punctuation)**

**FIRST has created so many opportunities for the students of Oxon Hill High School. We hope to lead after school robotics initiatives (with high school students serving as mentors for younger students), and visit feeder middle schools and local elementary schools to promote academics, science and technology. We currently support John Hanson Montessori Elementary School by having our seniors serve as judges for their annual science fair, and will assist them in starting a FIRST LEGO League team.**

**Team's innovative methods to spread the *FIRST* message (500 characters allowed, including spaces and punctuation)**

**Oxon Hill students developed a press release in order to share the life-changing experiences FIRST has offered them to the community through the local newspapers. Members gained so much by becoming involved with FIRST, and were eager to share their knowledge. Members even wrote their own personal accounts on the team website, to share with the public the benefits of becoming a member of FIRST and what it really means to them.**

Describe the strength of your partnership with special emphasis on the 2008/2009 year and the preceding two years (500 characters allowed, including spaces and punctuation)

We realize that our school may not have all of the specialized resources tools that we need, so we look to our partnership with our sponsors, NASA, BAE Systems and the National Society of Black Engineers Alumni Extension Chapter of Washington, DC and our partner veteran teams such as Patriots/Bowie HS and Battlefield HS for assistance. We look forward to expanding our partnership with sponsors and veteran teams in the metropolitan area to increase our impact on the community.

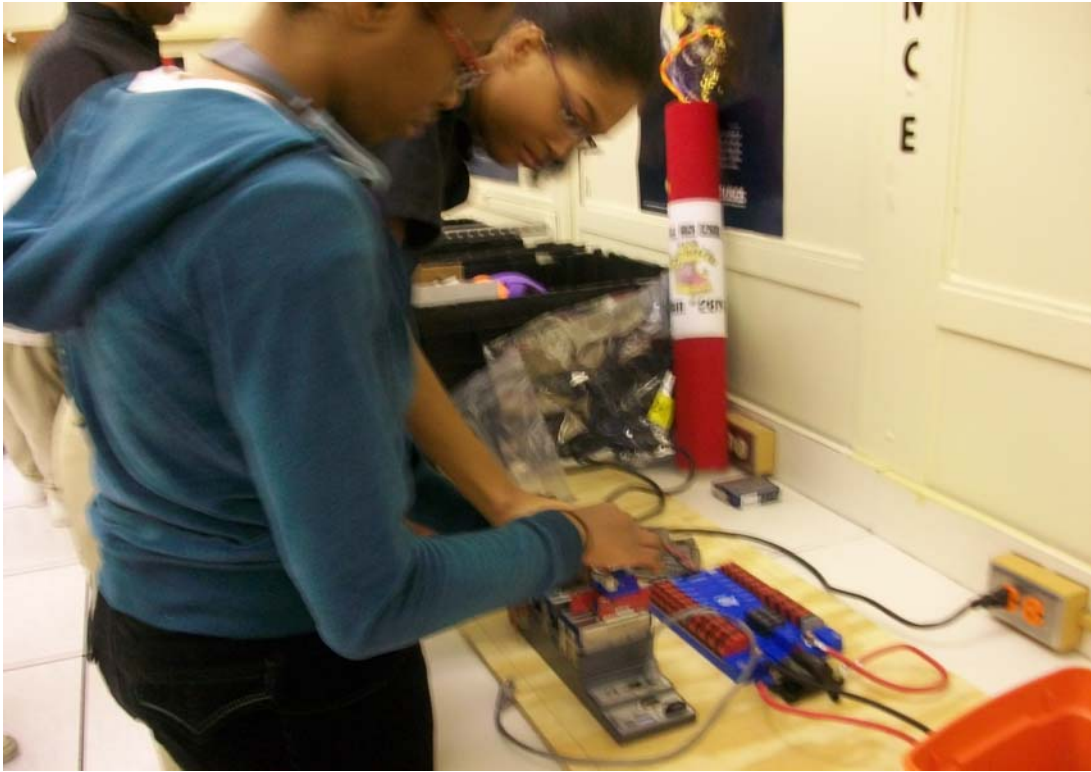
Team's communication methods and results (500 characters allowed, including spaces and punctuation)

Oxon Hill students established goals and plans in order to get their voice heard in the community. With marketing plans created by the business sub-team, Oxon Hill students traveled to local businesses and schools in hopes of finding sponsorships, donations, and support from the community. Students also marketed within the school, by targeting friends and teachers for moral support. Students created flyers and promoted the team website in the process.

Other matters of interest to the *FIRST* judges, if any (500 characters allowed, including spaces and punctuation)

Oxon Hill's enthusiasm as a rookie team and the strength of our partnerships will set us apart from other teams competing in this year's FIRST Robotics Competition. Our STP program is an active member of the National Consortium of Specialized Secondary Schools of Mathematics, Science and Technology (NCSSSMST). Oxon Hill High was an affiliate of the NCSSSMST Student Conference 2007 where our students placed first in the Robotics Competition during the conference.

Upload pictures (maximum of 4 allowed, not to exceed 1.0Mb in total)







Essay (10,000 characters allowed, including spaces and punctuation, or approximately 1500 words)

### **Dynamite is sheer explosive power!**

In the spring of 2008, a spark was ignited in the main office of the Oxon Hill School in Prince George's County, MD with the idea of forming a robotics team. That spark became a robust flame in the fall of 2008 when Team #2819 - Dynamite Robotics was formed. We will blow up barriers and misconceptions when we compete in the inaugural FIRST Robotics Competition in Washington, DC on February 26-28, 2009. A rookie team, Dynamite Robotics is the first team from a southern Prince George's County high school to participate in the event. Our young inventors have created a robot appropriately named S.A.M. (Super Awesome Machine).

Oxon Hill High School, located in Oxon Hill, Maryland, is a Comprehensive High School with a Science and Technology Center (STP) for southern Prince George's County, and an ESOL Center. Oxon Hill High School has set the goal to build a World-Class High School with our Attitudes, Actions, and Achievements. We have enjoyed a long history of outstanding achievements, and we have faced some challenges as well. We are located in a neighborhood in the burgeoning southern tier of the county, close to the D.C. state line in the Southeast region of the District. The mission of Oxon Hill High School is to prepare all learners to excel in an information-based, technologically advanced society. We have thoughtfully considered entering a team in the 2009 FIRST Robotics Competition to inspire all Oxon Hill students to stay engaged in school and to encourage students, especially girls and minorities, to consider careers in science, technology, engineering and mathematics. Our FIRST Robotics team will provide an opportunity for our students to excel at managing their own business. Our students will have a

chance to take concepts from textbooks and apply them to solve a real-life problem, as we work together while having fun.

Once ignited as a rookie FRC team, our influence in the Oxon Hill High School, the surrounding community and the FIRST community has expanded rapidly and produced a great impact in the process. Most people think of dynamite as something that blows things apart, but when contained and focused (for example, inside an engine), this sheer explosive power can provide useful work.

Success will be defined for Team Dynamite in terms of:

- partnering with our mentors, teachers, alumni and supporters who believe that we can do anything that we set our minds to
- setting and achieving our team's specific goals
- respecting and valuing the contributions of each and every team member
- participating in the regional competition and working with other teams from around the nation and world
- sharing what we learn with others, giving back to our community by encouraging robotics programs at all levels
- encouraging our team members to stay in school, to graduate on time and pursue degrees in the field of science, technology, engineering and mathematics

Our students form the core of our team, reflecting various backgrounds, grade levels and diverse skills that not only focus on the design and building of the robot, but incorporate business/management skills, budgeting, computer programming, marketing, communications/media, artistic skills and web design. To support each other, our team will monitor grades of participants, offer peer-to-peer tutoring, and track college acceptances and scholarships.

Team Dynamite students reflect on their experiences during our rookie season:

*"FIRST has given me an enormous amount of experience, not just engineering wise. It has given me life experience when it comes to people. This experience allowed me to excel my abilities for later on in my life."*

*"In robotics this year, I learned to appreciate it more by participating in this club. I made new friends and I was able to help build the robot."*

*"This year was my first year of robotics. I believe it has improved my teamwork skills and has broadened my knowledge of computer programming and electronics."*

*"The robotics program has helped me learn how to work together to build a robot. The electronics division (I was a part of) taught me how to strip wires and connect them correctly."*

*"I learned how to keep the team and other teams safe by educating and promoting safe habits and practices."*

*"My experience with FIRST this year cannot be described in small words. I've come to appreciate the cooperative environment created under the scenario of working under pressure. I have a new level of respect for workers in the engineering field. Also, the leadership skills I picked up have provided me with a useful toolset that will help me find success in my career. Without FIRST, I would have never fallen in love with the program."*

*"Being a part of the robotics team has given me a great experience and great exposure to the technology field. Looking back on the season, robotics has allowed me to learn how to construct machinery and make a lot of new friends. It takes a super awesome team to make a SUPER AWESOME MACHINE".*

*"FIRST of all, robotics allowed me to use my engineering skills to construct objects and build unity among friends. I find this to be a wonderful experiences and I encourage anyone to take their FIRST step into robotics."*

*"Our first season I think was good. It seemed that we used our time wisely and that we never really ran into a big dilemma and if we did we were able to fix it. I think next year, we don't need safety team as we should all be aware of what we're doing."*

*"FIRST has given me an opportunity to gain skills in engineering and website building. I was also able to make friends with people that I wouldn't see much otherwise."*

*"My experience with robotics has helped me to become a team player. We have all worked together to build S.A.M and have created friendships between us."*

*"This year in robotics, this program helped me to learn how to work together to build a robot. The website squad worked together to present the group's progress in building the robot."*

### **Learning to use dynamite effectively requires on the job training!**

Through research we learned that there is no "blasting school" or organized demolition instruction program available to learn how to use dynamite, so the only way to become a dynamite expert is to learn on the job. Techniques are passed on from generation to generation. Parents teach their children the skills, and the children then raise little blasters of their own.

We know that this won't be easy, and we can't possibly do this without the full support of our students, leadership team, teachers, veteran teams and mentors – those with engineering/technical backgrounds and others with valuable skills and experience.



We look to our sponsors and mentors (BAE Systems, NASA and the National Society of Black Engineers Alumni Extension Chapter of Washington, DC) to provide resources, professional expertise and management tips so that we can design and build a competitive robot, given the short time frame that we have to work with (six weeks). We also need our parents and guardians, Oxon Hill High School alumni and community members to help with logistics, transportation, providing snacks/food for team meetings and encouragement.

We invited Oxon Hill graduates to return to our school as volunteers, and we are creating a roadmap to build relationships within our community. We are visiting feeder middle schools and local elementary schools to promote academics, science and technology. We presented at John Hanson Montessori Elementary School on Tuesday, January 6<sup>th</sup> and they are excited about starting a FIRST LEGO League team in the spring. We are on the schedule to visit The Maryland International Day School on March 12, 2009 to assist with their science fair and we will visit Oxon Hill Elementary School in April 2009.

### **Like dynamite's inventor, we are sad, but not defeated.**

After returning to Sweden in 1863, inventor Alfred Nobel concentrated on developing nitroglycerine as an explosive. Several explosions, including one (1864) in which killed his brother Emil and several other persons, convinced authorities that nitroglycerine production was too dangerous. They shut down further experimentation with nitroglycerine in Stockholm. Alfred Nobel had to move his experimentation to a barge on Lake Mälaren. Although Alfred was sad, he was not discouraged and kept on trying. In 1864 he started mass production of nitroglycerine. Despite the challenges, dynamite brought Nobel a great fortune, which he used to found the Nobel Prize, which is occasionally awarded to those who persevered through critical moments in a process despite the risk of failure.

On November 24, 2008, Dynamite Robotics lost a critical member of our team to cancer. Mr. Joseph Mrad was a beloved teacher at Oxon Hill High School since August 1999. He was a whiz at woodwork, and all things mechanical, including metal shop and electronics. Our machine shop at the school was temporarily closed due to lack of expertise with the tools and equipment. Although we are sad, we are not defeated as Dynamite dedicates our rookie season to the memory of Mr. Joseph Mrad, former Technology Education teacher for the Science and Technology Program at Oxon Hill High School. We will persevere through this critical rookie season despite any challenges that we face.

Electronic signature of Team Captain/Student Representative certifying that the document is complete and accurate

***Raashid Bell***

Raashid Bell, Student Leader

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[YouTube Video](#)