

# SparX Standard



## Week 1 Issue

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## Introducing the 2015 SparX Robotics Team!

**Welcome to the crazy, busy, but fun world of the FIRST Robotics Team SparX 1126 of the Webster High Schools.**

*SparX is sponsored by the Xerox Corporation. Our mentors come from all walks of life; some are engineers, teachers, parents of current or former students, former SparX students, and some have just caught the 'FIRST BUG'. Regardless of their background, all of our mentors strive to teach about engineering, math and science and how those concepts will apply to our life outside of high school. Many of the students move on to study or work in technology, math, and science fields.*

*We have just six weeks to brainstorm, design, manufacture, assemble, and test a fully functional robot that we will compete with at the Pittsburg Regional for our first time on March 5th through March 7th, and then Finger Lakes Regional at RIT March 26th through March 28th. We have a total of thirty nine students this year.*



## Upcoming Events.....



### Open House

February 14th

2pm-3:30pm

In the Thomas HS Cafeteria

### Pittsburg Regional

March 5-7th

9am- 5pm

### Finger Lakes Regional

March 26-28th

9am-5pm

## Donor News...

### **Sage Ruddy Tour de Cure hits fundraising record**

American Diabetes Association of Rochester reached a record-setting \$1 million for the 2014 Sage Ruddy Tour de Cure, held just before the New Year, placing Rochester as the third-highest-fundraising Tour de Cure site in the nation. Nearly 2,000 cyclists and volunteers participated in the 2014 event. The next Sage Ruddy Tour de Cure event will be on June 13. For more information, visit [diabetes.org/rochestertour](http://diabetes.org/rochestertour).

Come support your local FIRST team at any of these events!

For more info check out our website at:

[Www.gosparx.org](http://www.gosparx.org)

**Thank you to all our sponsors and donors for all their years of continuous support!**



*Goofy Picture!*

# Community Outreach

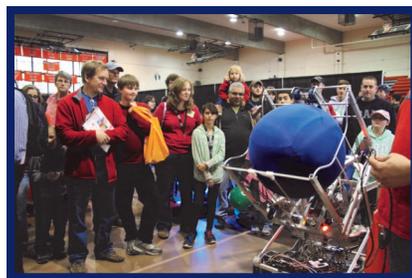
**"I don't work on a project unless I believe that it will dramatically improve life for a bunch of people."**

**~Dean Kamen**

Over the past thirteen years our team has strived to create a stronger relationship with our community. For several years now, we have volunteered at FIRST LEGO LEAGUE and FIRST TECH CHALLENGE competitions in local middle schools, which allows the FLL and FRC students to get introduced to the different programs in FIRST.

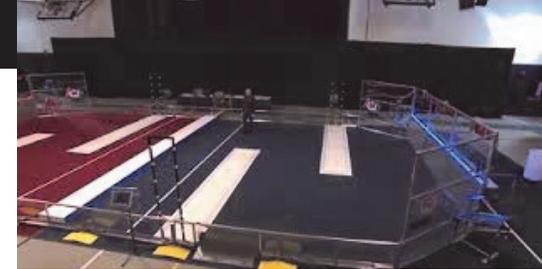
This year we held our 6<sup>th</sup> annual leaf raking day for senior citizens and the disabled in our community, called "Leon's Day", to honor one of our late mentors. This allows us to both spread word of the FIRST programs and to help alleviate some of the strenuous labor that senior citizens face.

*We have done numerous charity fundraisers over the past couple years such as: the Relay for Life walk, Ronald McDonald toy drive, and sponsoring local FLL teams. Doing demonstrations at local nursing homes, elementary schools, and scouts programs help to spread the FIRST message*



**Our 2015 team after our annual Leon's Day community service leaf raking.**

## The Game Description



**RECYCLE RUSH** is a recycling-themed game designed for the 2015 FIRST Robotics Competition. It is played by two Alliances of three teams each. Alliances compete simultaneously to score points by stacking Totes on Scoring Platforms, capping those stacks with Recycling Containers, and properly disposing of Litter, represented by pool noodles, in designated locations. In keeping with the recycling theme of the game, all scoring elements used are reusable or recyclable by teams or by FIRST at the end of the season. The playing Field is bisected by a small Step which may not be climbed on or crossed by Robots. Thus each Alliance competes on their respective side of the Field.

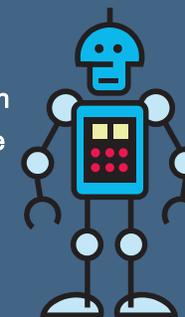
Each Match begins with a 15-second Autonomous Period in which Robots operate independently of their drivers. During this period, Robots attempt to move themselves, their Yellow Totes, and their Recycling Containers into the area between the scoring platforms, called the Auto Zone. Additional points are awarded if the Yellow Totes are arranged in a single stack.

During the remaining 2 minutes and 15 seconds of the Match, called the Teleop Period, Robots are controlled remotely by student drivers located behind the walls at the ends of the Field. Teams on an Alliance work together to place as many Totes on their Scoring Platforms as possible. Alliances earn additional points for Recycling Containers placed on the scored Totes. Alliances also earn points for disposing of their Litter in either their Landfill Zone (the area next to the Step marked by the white line) or placing Litter in or on scored Recycling Containers. Alliances that leave unscored Litter on their side of the Field at the end of the match add points to the score of the other Alliance, as it is considered unprocessed Litter.

## This Week's Fun Facts!

### *Metal Machines!*

Americans throw away enough steel every year to build all the new cars made in America.



Glass never wears out in can be recycled forever

## SparX History....

The SparX FIRST Robotics team was founded in the fall of 2002, consisting of both Webster Thomas and Webster Schroeder High School students. Since our rookie year SparX has gone on to win five regional events, six regional finals, countless design awards, and even two championship divisions. However, what the team prides itself on is the abundance of students that have gone on to study in Science and Technology, and the many of alum who have come back to help mentor the team.

SparX focuses on innovation and pushing the boundaries of math and science. The team has accomplished immense success both on the field and in the shop. The amount of knowledge gained by these innovative designs has helped the students to develop increasingly advanced designs each year.

# Week 1 Progress....

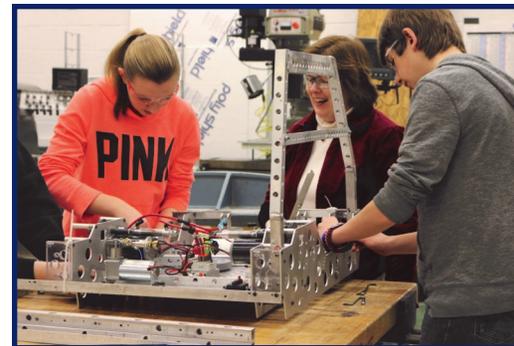
*SparX has been hard at work this week. We started it with the ever-important kickoff, where we learned the gist of this year's game. We're beginning the first stages of prototyping, and so far it appears to be going very well for us. We had a lot of fun simulating the game, and thinking out different strategies to provide a better understanding of the game dynamics. After the kickoff, we broke off into strategy groups to see what we could come up with and to address the functions most important to winning and being a good (and graciously professional!) teammate in Recycle Rush. After the strategy team had their discussion, we broke up into our Sub Teams and eagerly got to work creating prototypes and testing ideas for our 2015 robot. Check out our new and improved website for more information about the SparX Team at [www.gosparx.org](http://www.gosparx.org)!*



**Brad and Annabelle are excited about the new game!**



**Justin and Peyton strategize ways to pick up this year's game piece, totes.**



**Rachel and Levi work with their mentor, Colleen to get an old robot ready for prototyping.**



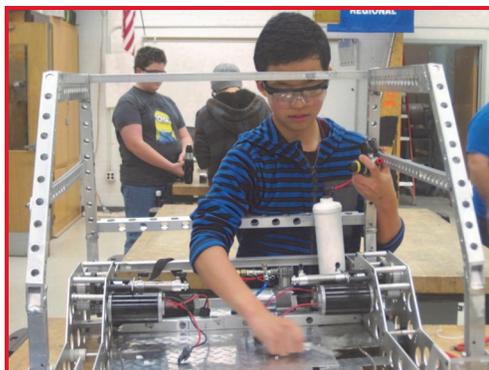
**Our 2015 Students!**



**Our 2015 team and mentors!**

## Week 2 Progress...

Week 2 has *flown* by! The SparX Team is busier than ever designing in CAD, strategizing, and making parts! The team is on a roll as the third week approaches. The acquisition subteam is building prototype parts (thank goodness!) which has given us a great idea of how the mechanism will work once complete. The drives subteam is hard at work designing parts and retrofitting our 2013 robot for testing purposes. But have no fear, we'll be done by the time Bag & Tag rolls around on Tuesday Feb. 17th! It's getting closer and closer and the feeling is positively electrifying. The promotions team has been hard at work trying to come up with a new mascot. Software is up to date with programming and Electrical is figuring out how to wire our robot. All subteams are hard at work this week.



### Mascot Ideas!!

Promotions is hard at work designing a new mascot. We need your help! Pick your favorite idea from the list below and maybe come up with your own.

- Sparky the Dog
- Sporky the Pig
- Sparxy the Dragon
- X-spar the Phoenix
- X1126 Android
- Flicker the Firefly
- Spar the Pixie
- Gammax the Lightning Dragon
- Sparky the Spark
- Sparky the Flame

## Week 3 Progress...

Well...It's moving! After all our hard work brainstorming, prototyping, designing, and building we are making parts! Our elevation team has completed nearly all of the CAD designs and is beginning to do some detailed drawings. We have also been able input the basic framework software and have been testing it and looking for ways to improve it.

In these pictures you can see a student and a mentor working on finalizing CAD designs. The bottom right picture shows two students and a mentor working on the wiring of a part, which has been completed at this point!

There is still lots of work to be done before we reveal our robot to the public at our Open House on Saturday February 14th from 2-3:30 in the Thomas High School cafeterias. Now that it's crunch time we will be putting in a lot of extra hours and working harder than ever to make sure our robot is ready to bag-and-tag on February 17th, which is the last day we can lay hands or tools on the robot! Wish us luck!

P.S. Please support our robotics team by going to the Bill Gray's at:

941 Hard Road, Webster, New York 14580

Tuesday, February 3, 2015, 4:30 P.M.-8:30 P.M.

15% of the purchases will go to Webster High Schools Robotics Team SparX!!!

Attached to this e-mail you will find certificates to present at time of purchase.



### Interesting Tech & Recycling Facts!

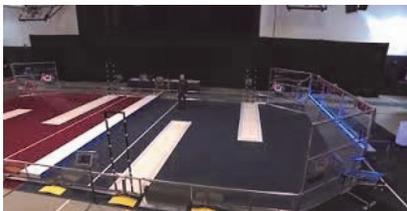
- The recyclable materials in the U.S. waste stream would generate over \$7 billion if they were recycled
- The word engineer comes from the Latin word meaning cleverness
- At one time, aluminum was more valuable than gold!

Every hour the sun radiates more energy onto the Earth's surface than is consumed globally in one year. To harness the power of solar energy, improvements in the efficiency of photovoltaics and electrical storage are required to reduce variability and intermittency of solar power. RIT's NanoPower Research Laboratories (NPRL) are making significant advances in the development of new materials and devices utilizing nano-materials and nanotechnology for energy conversion, energy storage, and power systems development.

"<http://www.rit.edu/showcase/index.php?id=36>"

# Week #4

After a lot of work and effort, we have finally gotten started on building the robot parts. Pretty soon everything will be built. The shop is bustling with students, making all of the parts. Some days it's hard to believe how far we've gotten since we started the build season. All mechanical teams are building parts. Electrical is getting close to finishing their "smart door", a "smart door" is an easily accessible panel with all the electronic parts to separate it from the other subsystems. The software team is almost done programming the bot. Promotions are asking around for thoughts on our Woodie Flowers nominee and writing the essay. This week we also have found our new mascot. We had a presentation and voted over the choices shown in week 2, The winner was X-spar the Phoenix with 14 votes and X1126 Android at second with 10 votes. Don't forget to come visit us at Bill Gray's in Webster on February 3rd, from 4:30p.m. to 8:30p.m.



This years field

## Student Reports

"We are starting to get back on schedule with our original plan for when we want things to be done. We've begun assembling all the mechanical subsystems"

-(Bradley Hanel)

"We've completed about 5 out of 6 of the major programming components, which means we are on great track"

-(Raza Ahmed)



Our 2015 team after our annual Leon's Day community service leaf raking.



# Fact box!!!!



- A single bolt of lightning contains enough energy to cook 100,000 pieces of toast.
- Tossing away an aluminum can wastes as much energy as pouring out half of that can's volume of gasoline.
- Americans use 4 million plastic bottles every hour! - Yet only 1 bottle out of 4 is recycled.
- Using recycled scrap paper instead of virgin material saves 7,000 gallons of water per ton of paper produced.
- Gary Dean Anderson designed the recycling symbol in 1970.



## X-spar the Phoenix

This bird, re-born from ashes, is the new mascot for the SparX team. X-spar represents the SparX ability to come out stronger no matter what happens. Also, X-spar's elegant design and shape resembles the SparX fire X from the logo. (seen above head)

( prototype design, may be subject to change )

# This Week in the Technology World ...

Hewlett-Packard early next year will begin offering a new line of "Enviro" batteries for laptop users who want to upgrade to longer-lasting and more sustainably designed batteries. HP and Boston Power have been testing the Sonata lithium-ion batteries for three years. The batteries were designed specifically for laptop use. After three years of use, the batteries will be able to keep 80 percent of their initial charge. The company also plans to release a portable lithium-ion battery for adding charge to cell phones or other gadgets and intends to enter the auto battery market.

-Martin LaMonica

## Week 5 Progress...

Week five has been a difficult week, but through all our hard work we are finally building up the final robot. This week mechanical team has finished designing and are now making parts to use on the final robot, most of the parts are already built. Electrical has the smart door finished and is now just tweaking the system to accommodate to any last minute problems on the robot. Programming has finished the software and will soon begin to upload it to the robot. Promotions is finalizing designs for X-spar, reorganized the display case at Thomas High School, and is finishing the Woodie Flowers award entry. Overall, this week has been very productive.



**SPARX GAME HISTORY**  
2014: AERIAL ASSIST  
2013: ULTIMATE ASCENT  
2012: REBOUND RUMBLE  
2011: LOGO MOTION  
2010: BREAKAWAY  
2009: LUNACY  
2008: FIRST OVERDRIVE  
2007: RACK 'N' ROLL  
2006: AIM HIGH  
2005: TRIPLE PLAY  
2004: FIRST FRENZY  
2003: STACK ATTACK

### Achievements

#### *Finger Lakes Regional- Rochester, NY*

Radio Shack Innovation in Control Award- 2005, 2006  
Rockwell Automation and Controls Award-2007  
Gracious Professionalism Award- 2009, 2010  
Judge's Award: Autonomous Mode- 2011  
Quarter-Finalist- 2005, 2007  
Semi-Finalist- 2012  
Regional Finalist- 2008, 2011, 2013  
**Regional Winner- 2006**

#### *Buckeye Regional- Cleveland, OH*

Judge's Award: "Grace Under Fire"- 2003  
Radio Shack Innovation in Control Award- 2005  
GM Industrial Quality Award- 2007  
Motorola Quality Award- 2008, 2011  
Regional Finalist- 2001, 2011  
**Regional Winner- 2003, 2004, 2008**

#### *Greater Toronto Regional, Canada*

Xerox Creativity Award- 2009

#### *NY Tech Valley Regional- Troy, NY*

Xerox Quality Award-2014  
**Regional Winner- 2014**

#### *National Championships*

Newton Division Winner- 2004  
Galileo Division Winner- 2006  
World Semi-Finalist- 2004, 2006  
Galileo Division- Quarter-Finalist- 2007  
Curie Division- Semi-Finalist- 2008

