

# team COMBUSTION 1912

January, 2014  
Volume 4, Issue 3

Northshore High School  
Salmen High School  
Slidell, LA

**FIRST**

## THE INFERNO

### Recent Events

- **MAVEN Launch Event**  
When: November 18th  
Where: Infinity Center, SSC
- **Textron Sponsor Visit**  
When: November 19th  
Where: Textron Systems, Slidell
- **Fundraising Seminar**  
When: November 23rd  
Where: Northshore HS, Slidell
- **FLL State Championship**  
When: December 7th  
Where: Holy Cross HS, New Orleans
- **Jr.FLL State Expo**  
When: December 7th  
Where: Holy Cross HS, New Orleans
- **Computer Science Week**  
When: December 9th - 15th  
Where: Northshore HS, Slidell
- **Beta Test Presentation**  
When: December 14th  
Where: Northshore HS, Slidell
- **FRC Kickoff**  
When: January 4th, 2014  
Where: SSC

### Outreach Ignites the Summer; Final Memories of Ultimate Ascent 2013 at Red Stick Rumble

For Team 1912 Combustion, there is no “off-season.” We work throughout the months before kick-off, spreading STEM inspiration and reaching out to our community. After capping off the school year by showcasing robotics to underserved students at a New Orleans Zephyrs event, we continued summer outreach with our third year at the Louisiana Special Olympics. We refereed special-needs athletes as they excelled at the Bocce fields. From there, we marked our first visit to Camp Bearable, a program to help children who recently lost a loved one. Our robot visit concluded a day of team-building activities and projects. During the first week of June, we visited the State Capitol rotunda to promote STEM education programs to our state



congressmen. With two robots, we definitely captured everyone’s attention!

As the month of June progressed, we once again volunteered at the CSI Science Camp and coordinated our very own Rocket Camp. The campers had a blast driving and operating our newest robot, and many elected to join JrFLL and FLL teams at their schools. Our community received further exposure to the spirit of FIRST as we returned to the 4th of July Heritage Fest, our oldest continuing outreach event. To open new opportunities for our FRC community, our team discussed mentor

opportunities with Intra-lox, a long-time supporter of Building Louisiana Science and Technology (BLaST). We concluded our fiery season of outreach by enhancing our school campus and preparing for the upcoming year. This year’s biggest offseason event was the inaugural Red Stick Rumble, a competition hosted by Team 3337, “Panthrobotics”, at Woodlawn High School in Baton Rouge. We came out of qualifications ranked 4th, with a record of 6-2, and captained the 3rd alliance. With our alliance partners, 3847 and 3606, we narrowly lost in the quarterfinals. However, due to the unique structure of this competition, we rose from the ashes of our defeat with 4035 and 3991 in a semifinal round. We went home with the happy memories of Red Stick Rumble burning brightly in our FIRST history.

# Zero Robotics Tournament Opens New Programming Challenges

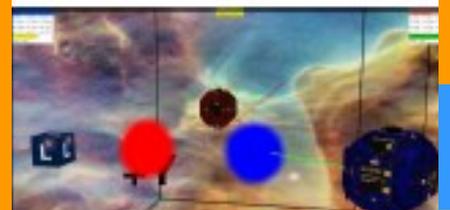
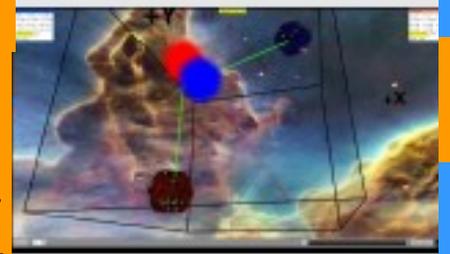
## CosmoSPHERES

For the 3rd consecutive year, we are competing in the Zero Robotics SPHERES competition. This year's challenge is the Cosmo Project: Critical Operation to Save Mankind from Obliteration. In CosmoSPHERES, teams must program autonomous satellites to navigate through a field of space debris, then deflect a comet from its impact trajectory with Planet Earth. To deflect the comet, teams can collect mass from the debris objects with a collaborative net, thus increasing gravitational attraction; as an alternative, the SPHERES satellite can collect an impulse laser from supply packs. Each team must choose and implement the most effective strategy using C/C++ and applied physics knowledge. Students learn and use diverse concepts such as vector math, quaternions, and closed loop control in their quest to save Earth.

## What is SPHERES?

MIT developed the Synchronized Position, Hold, Engage, Reorient Experimental Satellites (SPHERES) in 2006 for scientific research purposes. The 8-inch diameter satellites can be programmed for a broad spectrum of test flights, ranging from tight formations to autonomous docking sequences. In conjunction with MIT, DARPA and NASA sponsor the Zero Robotics programming competition, held since 2011. Teams play in four rounds: 2D, 3D, semifinals, and finals. Each round progresses in difficulty as the tournament evolves from a planar simulation to programming actual SPHERES in space. Every team dreams of seeing their code in action aboard the International Space Station!

# ZERO ROBOTICS



## Our Sponsors



## Sponsorship Drive

Recognizing a need to strengthen our financial base, we have reenergized our efforts to solicit funding. As always, we thank our current sponsors for their generous support over the years, and hope to maintain a brightly burning partnership. To reflect this fiery enthusiasm, we are restructuring our sponsorship tiers to more effectively recognize our sponsors. This ties in to our search for new sponsors. For the first time, we are spearheading a coordinated initiative to improve our fundraising techniques. We have organized a new Finance Team that is devoted to maintaining and strengthening our existing relationships with our current sponsors while pursuing new sponsorship opportunities. We hosted a regional Fundraising Workshop on November 23rd to help improve our fundraising techniques and processes. By building strong relationships with our sponsors, we can ensure a brighter future for STEM education in our region.

## Beta Testing 2014

This year, we were privileged to be selected as an FRC Beta Test Team for the fifth consecutive year. We received the new software from National Instruments and collaborated with the NI support staff to eliminate issues ahead of the upcoming season. A summary of our findings was presented on December 23rd.

## Upcoming Events

Feb. 9th; Krewe of Slidellians Mardi Gras Parade sponsored by the Slidell Women's Civic Club.

Feb. 17th; Team Combustion Open House

Feb. 18th; "Bag and Tag" our competition robot

Mar. 13th — 15th; Orlando Regional

Apr. 4th — 5th; Bayou Regional

VISIT OUR WEBSITE:

[WWW.TEAM1912.COM](http://WWW.TEAM1912.COM)

CONTACT US:

[COMBUSTION@TEAM1912.COM](mailto:COMBUSTION@TEAM1912.COM)

AND FOLLOW US ON

FACEBOOK AND TWITTER



## LOOKING FOR MECHANICAL ENGINEERS

Team Combustion is in need of mechanical engineering mentors. As a mentor, you can assist us in building and designing our robot. Our main season is a six week period between January and February. Contact us at our email and visit our website.



FOR MORE INFO, GO  
TO:  
[WWW.USFIRST.ORG](http://WWW.USFIRST.ORG)

## The New Team Combustion

In an attempt to create a more viable team, Team Combustion will now include Salmen High School, along with its original Northshore High School members. The addition of the new batch of thinkers, designers, and builders will help form the foundation of team capable of rising to the highest ranks of FIRST Robotics. From the very start the new Team Combustion members from both schools blended seamlessly into a factory of ideas and prototypes. Despite the previous rivalry between the two schools, our students have displayed a unity that has set the tone for a very productive start to the build

## FIRST 2014 Challenge

The focus of this year's FIRST challenge is on alliance teamwork. AirAssist, the 2014 challenge, is a game that encourages basketball style assists between robots in an alliance. The field features three zones along with raised and ground level goals. The robots must move exercise balls across the field and shoot them into one of the scoring goals. Extra points are scored for passing between robots on the same team and between the different zones. Another bonus results from launching the ball across the field (over a raised bar), and having a teammate catch it.

