

# 4-H EXPLODING BACON ROBOTICS CLUB NEWS

Winter 2015



## 2015

Mark Your Calendars!  
World Champs Apr 22-26



### Shirts Available Online

Exploding Bacon is selling our limited edition 10th Anniversary baseball shirts

To order visit

<http://squareup.com/market/exploding-bacon>

When they're gone, they're Gone!

## BACON WINS

**2015 CHAIRMAN'S AWARD AT THE INAUGURAL GEORGIA SOUTHERN CLASSIC REGIONAL AND 2015 IMAGERY AWARD AT THE ORLANDO REGIONAL**

by Sarah P

Exploding Bacon works hard to inspire the next generation of innovative scientists and engineers by volunteering in our community. At the Georgia Southern Classic Regional competition, our efforts earned us the Regional Chairman's Award. This award is FIRST's most prestigious award, and is given to the team that best impacts their community and promotes appreciation for STEM subjects. This award secures our position at the 2015 FIRST World Championship in April. Additionally, at the Orlando Regional competition, Exploding Bacon was presented with the Jack Kamen Imagery Award for our consistent image and pleasing visual aesthetics.



Llamas visit the GA Regional



Congressman Daniel Webster visits our pit at the FL Regional



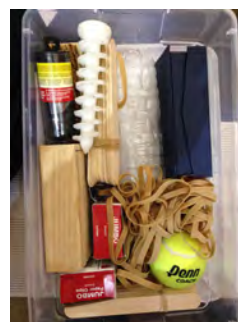
## SPARK KIT TO UGANDA

by Alex H and Josue G

The Spark program was developed by Exploding Bacon, to be used in classrooms around the world with few resources. The program brings to light new ideas for STEM education by igniting an interest for STEM in the minds of young children with hands-on experiments designed to help them learn more about the world they live in, and learn problem solving techniques. The kit is full of exciting experiments and activities that are STEM based. We are sending supplies such as a 3-D printed screw, rubber-bands, paper-clips, magnets, a prism and more.

Spark kits have already been used in Haiti, and the kids loved to see the exciting experiments. Our newest kit is being shipped this week to a school for orphans in Uganda, in order to ensure that the students are not only educated, but also inspired.

We are currently in the process of developing a kit to send to Nicaragua and are establishing plans to send several kits to Asia this summer. As our opportunities increase, our cost to gather the supplies and to send these kits around the world is also increasing. If interested in sponsoring a Spark kit, please contact us at [explodingbacon.team1902@gmail.com](mailto:explodingbacon.team1902@gmail.com)



### Exploding Science 2015 Summer Camps

June 8-12

June 29-July 2

August 3-7

Visit our website for more information about locations and pricing.

### Bacon braggin' #MakeItLoud

On Exploding Bacon, we teach skills relevant to all future careers, including public speaking. Our students are eloquent ambassadors of FIRST, and are frequently asked to represent FIRST. At the Orlando Regional, one of our freshman mechanical students was interviewed by Orlando's Channel 6 News, and one of our Co-Presidents was selected to give US Congressman, Daniel Webster, a tour of the competition.

[EXPLODINGBACON.COM](http://EXPLODINGBACON.COM)

# BUILD SEASON

by Nathaniel W

At the start of the 2015 build season, we hosted a kickoff and had multiple classes about the game to get a better understanding of it. For the next two weeks we started to prototype the necessary components for the robot, like the elevator, grabber, and drive base. We spent most of our time on the grabber, trying to stabilize the stacks of totes to make sure that we didn't have a stack attack! We spent the most of the third week devising the Computer Aided Design of our robot to send out to our machine shop partner, Magnus Hi-Tech. During the fourth and fifth weeks, we focused on driving and devised a test for anyone who wanted to be on the Drive Team, with more than 70 questions about this year's game. We also had a prototype robot for drivers to practice with. During the last week, when we got all of our robot parts, we rushed to get it together within four days so that we could spend the last few days fixing the weight and kinks in the design. We also came up with a name for our robot, Pork-Lift, and then we bagged and tagged it.



## ROAD TO CHAMPS HELP OUR FLYING PIGS RUSH TO CHAMPS!

Exploding Bacon received the 2015 Inaugural Georgia Southern Classic Regional Chairman's Award, which is the most prestigious award an FRC team can receive. We are excited to compete at the World Championship level, and would truly appreciate your help in getting us there. In order to transport our team and equipment to St. Louis by bus, we need \$8000.

Please consider partnering with us to send these talented teens to World Champs. *Your donation will help our pigs fly!*

Visit <https://www.youcaring.com/ExplodingBacon1902>

*Thank you!*

# BUILD SPACE

by Dominic C

Over the past nine years of Exploding Bacon's history, we have built everywhere, in garages, abandoned warehouses, donated spaces, and last year, a mentor's garage once again. This year we were lucky enough to secure a dedicated space for our team to meet, plan, prototype, and build. Our build site is in a central location that is convenient for almost all of our team members to come for practice. Having this space to call our own has increased our productivity, and ultimately our success, this season. It might not be big, but it's home and we are extremely thankful that we have the opportunity to use it.



# 2015 ROBOT

by Phillip P

Our 2015 robot combines several simple mechanisms to form a fully functional robot. We use an elevator with spring clamps to perform as a ratcheting system to pick up the totes and stack them. Our robot acquires the totes via the ground and the Human Player Station. Our robot has a ramp on the rear, with the same angle as the Tote Chute, to acquire the totes via Human player station, and we use a wheeled intake system to get the totes on the floor. The drivetrain is a six wheel raised center tank drive. It has Omni Wheels on the front so that we can easily align the ramp with the tote chute. Like every year, the entire robot has the same imagery as our team.



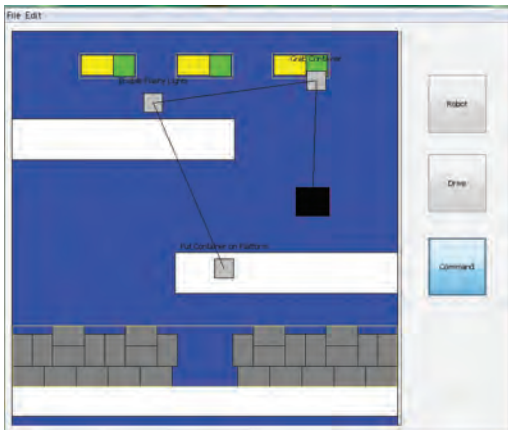
**TEAM  
1902**

For more information visit our website or email us at [explodingbacon.1902@gmail.com](mailto:explodingbacon.1902@gmail.com)  
**EXPLODINGBACON.COM**

# PIGGY PLOTTER

by Ryan S

This year, we decided that we wanted to try and do something new. That is why we have developed a new tool called Piggy Plotter. Piggy Plotter is an easy to use Graphical User Interface (GUI) program that allows us to create new autonomous programs without having to write any new code for them. With Piggy Plotter's drawn-to-scale Recycle Rush field, we can easily decide where we want the robot to go, what we want it to do, and when we want it to do it. When we are done designing an auto program, Piggy Plotter saves it as a .auto file, which the roboRIO (Pork Lift's brain) can read and interpret as an auto program. Once we have made an autonomous program, we can put it on a flash drive and plug it into the roboRIO. Before a match begins, we can choose which .auto file we want to use from the driver station.



We plan to release Piggy Plotter to all FRC teams after the Championships. Once we release it, we will maintain, update, and document Piggy Plotter for the following years, including releasing official to-scale fields for each new FRC game.

# 4-H PROJECT BOOKS

by Sebastian H

If you were on a FIRST 4-H team, you may have noticed that the club Project Books do not fully cover every aspect of FIRST teams. That's why, in partnership with 4-H, we have taken the standard Project Books and modified them to be more applicable to the accomplishments of a FIRST team. These FIRST specific 4-H Project Books will help FIRST teams prosper in 4-H. Currently approved for county-wide application, they are in the process of gaining approval for statewide, and eventually nationwide, application. Our 4-H Agent anticipates that they will be adopted at the State level for the next 4-H season.



# OTRONICON

by Angelo B

This past January, Exploding Bacon had the opportunity to demonstrate our robot at the Orlando Science Center's Otronicon, sharing the wonders of STEM with all attendees. At Otronicon, we brought our 2014 robot, "Boxer" to help represent our sponsor, Lockheed Martin. Here, we spread the word about STEM to every single person that walked by our booth, whether it was a little kid, a high school student or an adult. As we drove the robot all around the place, children of various ages stopped to get the ball and throw it into our robot. They jumped around happily, reminding us of our unique purpose for building robots: to share our passion for STEM subjects. Aside from displaying our robot, Lockheed Martin also provided us with space to display information about FIRST, our outreach programs (such as Spark and Exploding Science), and our robots from previous years. The whole purpose of this event was to spread FIRST and STEM to everyone that visited, introducing them to a world of possibilities. New seeds of curiosity were planted, and new members were acquired, including Owen and Sean. Overall, Otronicon was an amazing experience that our students will never forget.



# SPONSOR SPOTLIGHT

**4-H** We are very thankful to have the support of 4-H! 4-H not only provides us with a space for our Club Meetings and Banquets, but they also print materials for us, such as our Judges Packets, which is a huge saving for our team. We use these printed materials at our competitions, which helps us convey our efforts to judges and maintain our award-winning image. Thank you 4-H for helping our pigs fly!

*Thank you  
2014-15 Sponsors  
for making this  
season possible!*

Lockheed Martin

NASA

Host, Inc.

BAE Systems

Electronic Arts

Magnus Hi-Tech  
Industries

NBC Comcast Universal

Central FL Fluid  
Power Society

Firehouse Subs

Stage Equipment  
and Lighting

Castle Ventures

4-H Orange County

Elise Cronin-Hurley

Web and Graphic Design

Simsol

Walt Disney World

# GROWING UP BACON

By Noah (12) and Gabi (10)

brother and sister of  
Co-President Alex M

Growing up in Bacon has been an awesome experience for us. We have been a part of Bacon for four years and have made lots of friends. Exploding Bacon is like a second family to us. There are so many reasons to love being a part of the team.

One of the advantages of growing up in Bacon is getting prepared for the First Robotic Competition (FRC). We have the opportunity to observe how Bacon designs and builds a robot for competition. Another advantage is that no matter how young you are, they always let you participate in competitions, demos, and help with NEMO. In addition, the students and mentors are very supportive. They always encourage us and are really great role models. They motivate us to work hard towards being more responsible so we can be on the team, too. We hope to help program the robot, be on the Chairman's Team and be on the drive team. We hope to be Engineers someday, thanks to Exploding Bacon.

Thanks Bacon, for the amazing experience!

**Oink, Oink.....BOOM!**



Noah and Gabi's FLL Team



Siblings of 1902 Students. Our future.

## PIGGY BANK

Exploding Bacon has its largest budget yet at \$68,000 needed to support the FRC team, our robot, competitions and build space, plus 3 FLL teams and a Jr FLL team.

In addition to the support for our team's expenses, provided by sponsors such as Lockheed Martin and 4-H, some of our sponsors, BAE Systems, Comcast NBC Universal, and Disney VoluntEars, have generously donated to cover \$14,000 of our competition registration fees. Other fundraisers throughout the year include Menchie's Frozen Yogurt sales/tips, Poinsettia sales, Krispy Kreme donut sales, and limited edition 10th anniversary shirt sales. Currently, Exploding Bacon is raising funds for a charter bus to World Championships in St. Louis.

**Oink Oink  
BOOM!!!**

## GIVEAWAYS OF SPARK KITS AND EXPLODING SCIENCE RESOURCE BOOKS

Ashley R

At the Georgia Southern and Orlando Regionals, Exploding Bacon raffled off one of our Spark kits, and one of our Exploding Science Resource Books. Spark is a kit of reusable science experiment materials for children around the world, and our Exploding Science Resource Books contain science experiment instructions, as well as activities for a STEM summer camp. Our students visited about 100 teams at the two Regionals to promote these two products and accept raffle tickets. Our students say that this experience showed them firsthand that Exploding Bacon's mission is to ensure that all children have the opportunity to learn about, and appreciate, STEM subjects.



## SPOTLIGHTS

### Bacon Student

*Our students do more than build robots.* Several of our students are unable to join us at World Championships this year because of prior commitments to fine arts performances. Alex H (Lord Capitate) and Sarah H (Juliet) will be in a play, *The Seussification of Romeo and Juliet*. Bryce D and Nathan B will be performing in WPHS's *Night on Broadway show: Once Upon a Time*. And, Jordan G will be in the play *Jenkins Ear, Part 3*, shortly after World Champs. *Break a leg, Bacon superstars!*

### Bacon Alumni

Kevin Karpy is a 2011 Alumni with Exploding Bacon. As a former member, Kevin is aware of how many hours students and mentors spend in creating, cutting and assembling over a thousand foam pigs on a rocket pins each year. These unique pins are handed out to our guests visiting the our pit during Regional events and by our students to other teams.

This year, Kevin donated his time and laser equipment to cut more than 10,000 foam pieces; many of the shapes smaller than a penny. *Thank you, Kevin, our hands are grateful!*

### College Mentor

Alexis B and Skyler C are college mentors currently attending Valencia College with plans to soon transfer to the University of Central Florida. Both have recently joined the cast at Walt Disney World, bringing our total mentor/parent Disney VoluntEars to six.

### Professional Mentor



Elise Cronin-Hurley is a Freelance Web and Graphic Designer, and serves as our Image/Marketing/Chairman's Mentor. Elise joined Bacon when her son was a student, but now that he has graduated, she stays on as a mentor. "I never thought of mentoring students before,

especially not on a robotics team, but there is a student now considering Graphic Arts as a career, and we have numerous very talented artists and communicators, all of which I love working with." Elise is looking forward to helping the Chairman's Team prepare for their presentation at the World Champs held in St. Louis in April.

*Thank you to those that helped with additional parts of the newsletter:*

Sarah P and Jared A  
and Mentors James A, Amanda L, Joyce W,  
Shanna H, and Ashley K

