

# The Daily Spread



Volume 2, Issue 2

Winter Issue 2013-2014 Season

## SOUTH LYON ROBOTICS CLUB

### Thank You New and Returning Sponsors!

All of the great strides in team achievement we've taken these years would not be possible without the kind support of all of our sponsors! Every year we've called out for help with our robot build and covering our costs, and never have we been disappointed. We have had continual support from our returning sponsors and new generous support from our new sponsors. Without you all, we'd just be a group of kids with big dreams and no way to make them a reality. Once again, thank you all so much for your help!



"It's a great learning experience for the stuff I'm interested in."-Bryce B.



"It's a fun environment to be in with other smart people."-Ben W.



"It's a fun, learning experience."-Austin P.

### Upcoming Events

- February 18th– Bag and Tag Day
- March 14th and 15th– Escanaba Competition
- March 28th and 29th– Livonia Competition

Note: All competitions are free to the public

### Our New Team Members

Many members have gone and flown away, but through their past inspiring work, we were able to acquire new members. The new members have been mentored here for a few months working with the veterans on many projects including the VEX robots for this year's VEX challenge. We asked them why they love robotics and here's what they said:



"I like that art has been integrated into this club because it lets me use my skills in a different field. -Rachel C.



It's a fun community."-Andrea P.



"Because it's fun for everyone." -Baylie B.



"I've always wanted to build my own Wall-E."-Mack G.





## Practice Field Goal Taking Shape

One of the keys to the team's success is practice. To facilitate this, the team made a practice goal following the blueprint given by FIRST. Amanda P. and one of the team's mentors, Brian Perion, constructed this year's wood high goal in the Perion's garage on one cold, cold winter day. The bottom goal was made in Mr. Weber's technology class workshop.



## Prototype Launchers Taking Shape

When given a time limit, the Toasters really know how to hustle! Within a week of kick off, our build team had two functional prototype launchers ready for experimentation and testing. One of the prototypes focuses on using potential energy, using a catapult to throw the ball. The second prototype uses energy that is transferred to wheels to launch to ball. Both worked out well, but in the end we decided to use the roller design.

Catapult  
Design



Roller  
Design



## This Years Game

This year's game is heavily focused on teamwork. The teams will have to be able to shoot, pass, and catch a ball that is nearly three feet in diameter. Teams earn points by scoring in one of two goals; one in the air and one on the ground. However where teamwork is heavily needed is the new "assist" aspect, where additional points are earned by passing and catching. Also, the new field element, the truss, allows team to work together to throw and catch a ball. With addition of the autonomous period, where robots have to work with premade programs and every score made has a bonus added to it, this year's event will be an interesting mix of working on one's own and working with a team.



## FIRST

Team 3641 is happy to be part of "For Inspiration & Recognition of Science and Technology" (FIRST). As high schoolers, we compete in the "FIRST Robotics Competition" (FRC) league for 9th-12th grades. For more information on FIRST, please visit their website at: <http://www.usfirst.org>



## Mentors Help Make It Happen



**Jim Burkowski:** Cybernet, Mechanical Engineering, 4th Year Mentor

"Being a mentor for FIRST Robotics Team 3641, gives me an opportunity to inspire students to creatively design robots by passing along my knowledge with 20 years of experience in the field of Mechanical Engineering."



**Ed Debler:** Retired from Ford (29 Years), Mechanical Engineering, 5th Year Mentor

"I like working with H.S. students because most of the time they listen to my advice. I can give them the benefit of my years of experience. I think that I can have a positive influence on their careers and can make a difference in their futures."

**Mr. Ron Weber:** South Lyon East High School Technology Teacher.

8th Year Coach for Team 3641

Mr. Weber likes being a robotics coach because "It's where science fiction becomes science fact."

**Mr. Chris Abbott:** South Lyon East High School & South Lyon High School Business & Math Teacher.

1st Year Coach for Team 3641. 2nd Year of Coaching for FIRST Teams.

"I like interacting with the students and seeing them learn in a fun environment outside of the traditional school setting."



**Jacob Pigeon:** College student at U of M Dearborn. Engineering. 1st Year Mentor

"Robotics inspired me to do better in life. I want to give back to this program, what it gave to me."



**Mike Lepkowski:** Pi Innovo LLC Electrical Engineer 2nd Year Mentor

"I mentor because I get to work on interesting engineering problems and show students the fun side of engineering."



**Manuela Novilla:** Ford, Engineering, 2nd Year Mentor

"I became a mentor because I wanted to inspire and guide this new generation of students the same way my mentors inspired and guided me as I trained to be an Engineer."



**Katie Hyrila:** SAI, Electrician, 3rd Year Mentor

"Because I'd rather have the future generation build robots than watch the Kardashians."

**Brian Debler:** Harman International, Embedded Software Engineer, 5th Year Mentor



**Lucas Stodor:** College Student Wash-tenaw Community. Engineering.

1st Year Mentor

"Good Times"

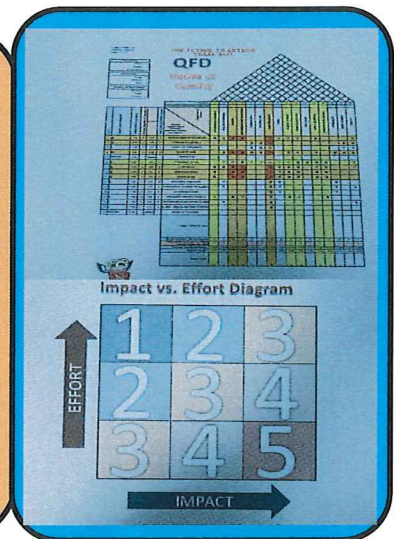
**Brian Perion:** Chrysler International Operations, 2nd Year Mentor

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## QFD

QFD is a process used by many businesses and companies around the world to maximize output and minimize expenses. In the past, we used QFD to effectively plan out the "What's", which are what we believe essential to the robot to have a fighting chance, and the "How's", which are the different ways to perform the same task, such as a launcher or a thrower for the need to score in the field goal and over the truss for this year's game. PPUT stands for points per unit time. We use this calculation to determine the optimal scoring opportunity using the different matchups of points possible between actions and the amount of time it would take to perform these combinations. With this information, we can determine the number of cycles we can do in an average game. We use all this knowledge to determine the best actions to take during the competitions.



## 3D Printer

Recently we won a printer from FIRST choice. We entered a lottery they were hosting and won a Cube 3D printer. How this printer works is mainly with the assistance of two parts: one moves forward and backwards, and a dispenser that moves left and right. The dispenser uses plastic that's on a spool and places the plastic on to a heated cube. The melted plastic, moved by the plate, then creates the desired shape. The shape is determined by a pre-uploaded design. The design is first created in Solid Works, a 3-D modeling program. After that you use a specialized program that converts the design to an acceptable program. Next, put the modified program on a USB drive, and input the USB drive into the 3-D printer and then the printer will be able to print out the imported design.





## 2013 Recap

### Female Flying Toasters Excel at Robotics

#### List of Accomplishments

- Winner of District Robotics Competition at Livonia Regional, March 2013.
- Winner of coveted District Chairman's Award at Gull Lake, March 2013.
- Winner of Engineering Inspiration Award, March 2013.
- First-time qualification to Michigan State Robotics Championship, April 2013. Final rank placed 18th out of 203 teams in Michigan.
- First-time qualification to World FIRST Robotics Championship, April 2013. Final rank placed 57th out of 400 best teams in the world.
- Went undefeated for eight matches in an all female competition.
- Competed at MARC, IRI, and Michigan Science Center."



During the post season Bloomfield Girls Robotic Competition at Bloomfield Hills High School, our ladies went on to achieve many firsts. Designed to promote girls in STEM, the competition required the robot driver, operator, human player and pit crew to be comprised of high school aged girls only. Male team members were allowed to be in the pit, but only in support or advisory role.

During the eight qualification matches, the Flying Toasters Girls' team quickly became unstoppable. Tessa F., Amanda P., Sarah G., Rachel C., Andrea P., and Baylie B. went on to do what no boy team has ever done before in Toaster history. They went undefeated in qualification matches earning an 8-0 record. That record placed them as 1<sup>st</sup> seed team for eliminations, another first for the Toasters.

At selection, the Flying Toasters picked Team 33, the Killer Bees from Notre Dame Prep school in Auburn Hills, and Team 51, the Wings of Fire from Pontiac. The Alliance of three high school teams quickly went to work as they made a clean sweep through Quarter Finals, 2-0. They sweated in the Semi-Finals, 2-1, but made it through to the Finals. Unfortunately, they were stopped in the Finals due to damage that caused jamming 0-2.

In another First for this three year old team, they received a Finalist trophy for their efforts; overall record for the competition was 12-3, bringing their 2013 year match record to 69-30-0. Here's what the women of the team had to say about the competition:

"The whole competition had an exhilarating, electric feel; the pressure to win and the satisfaction of doing so was driving up everyone's adrenaline. I am so grateful for the opportunity to compete like this, and the hands on experience in problem solving and quick thinking in the field and the pit is something I'll never forget." -Tessa F.

"The Bloomfield Hills competition was a wonderful experience. Although I had visited many competitions in the past, being able to drive the robot and have a new experience of working down on the field was thrilling." -Baylie B.

"I liked the female competition. It inspired me more to be a female engineer, and it was a nice change to work on the robot." -Amanda P.



**Support our Sponsors**

Please support these local businesses by visiting their locations and using their services. In addition, please thank our company sponsors when they visit our competitions.

**Local Services Please Support (2014 Supporter):** All State Sarkella & Associates; Brostrom Physical Therapy; Co-Reutter; Farmers Insurance Frank Mathias Agency; Flower Loft; Home Depot Novi; Martin's Hardware; Norm's Auto Repair; Oxford Hyperbaric Oxygen; RIW Hobbies; South Lyon Orthodontics; TNT Orthodontics.

**Local Services Please Support (2013 Supporter):** Brostrom Physical Therapy; Bud Martin Hardware; Busch's; Dandy Acres Vet & Small Animal Hospital; Lucas Coney Island; Miners Barber Shop; Norm's Auto Repair; Oxford Hyperbaric Oxygen; Peter's True Value Hardware; South Lyon Family Docs; South Lyon Orthodontics; TNT Orthodontics; Tractor Supply Co; Vibe Credit Union; Walkers Auto Service.

**Company Sponsors (2014 Supporter):**

Artistic Permanent Make-Up; Cybernet; Filter Technology; Howa USA Holdings; Interventional Pain Management; Quality Manufactured Homes; TRW Automotive; Waltonen Engineering, inc.

**Company Sponsors (2013 Supporter):**

AndyMark; Artistic Permanent Make-Up; Borg Art & Landscape Design; Cash Sod Farm; Cybernet; Farmington Distribution Center; Filter Technology; KTC; Leidos; Michigan Seamless Tube; Pratt & Miller Engineering; RIW Hobbies; Schroder & Schroder; Solidworks; South Lyon Schools; Superb Fabricating; Swain Media; TRW Automotive; Yazaki.

**How You Can Help Inspire Youth**

This year's 2014 combined Robotics Team from South Lyon East High School (SLEHS) and South Lyon High School (SLHS) is seeking individuals and businesses who would like to help inspire youth as a 2014 donor or sponsor. South Lyon's Team 3641 "The Flying Toasters" is helping students develop a passion for science, technology, engineering, art, and math (STEAM).

If you would like to make a monetary donation, checks may be made payable to "South Lyon Robotics". Checks can be handed to SLEHS/SLHS robotics students or mailed to: Mr. Weber (Attention: Robotics Team) South Lyon East High School 52200 West Ten Mile Road South Lyon, Michigan 48178

If your business would prefer to donate new materials instead, please let us know. There are many items needed to build this year's robot and support team meetings (i.e. hardware, pizza, bottled water, etc.).

If you would like to see and experience robotics first hand, please attend our upcoming match on March 28-29 (Fri-Sat) at Livonia Churchill High School from 10 am – 5 pm. Admission is free.

**For More Information**

For more information, please email Mr. Weber at [weberr@slcs.us](mailto:weberr@slcs.us) or visit the team's website at [theflyingtoasters.org](http://theflyingtoasters.org)

**Mentors (Continued)**

**Mr. Lee:** retired from Ford. Engineering. 1st Year Mentor

**Patrick Humfleet:** College Student at MTU. Physics. 1st Year Mentor

**Kerry Pierce:** College Student Lake Superior State. Engineering. 1st Year Mentor

**Booster Board (also mentors):**

**Jen Debler:** President (& Chairman's Mentor),  
**Sherri Heffernan:** Vice President (& Newsletter Mentor),  
**Barb Brodesser:** Treasurer (& Mentor for Student Fundraising Tracking),  
**Cristina Novilla:** Food Scheduler (& Photography Mentor),  
**Bridget Perion:** Secretary (& Newsletter, Fundraising Mentor).