



Bionic Blackhawks, Team 2834

The Quill

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Inside this issue:

FLL Summer Camp 1

CAD Seminar 2

International Girl Scouts River

Crossing 2

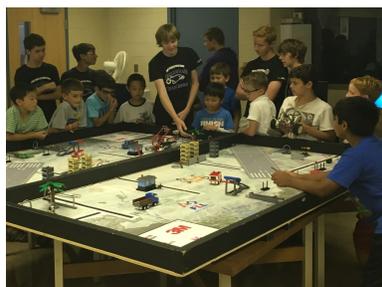
Magna Troy Coalition 2-3

Full STEAM Ahead 3

We are approaching the end of our season and preparing for the next. Here's a look at our outreach and community service events that the team participated in over the summer, including many team run summer camps and outreach events to spread the word about FIRST.

FLL Camp

In July our team hosted a Lego robotics camp for elementary school students involved in the First Lego League. First Lego League is one of the entry levels of FIRST Robotics, it allows elementary school



students to build robots with Legos and use a simple block programming language to make their creations come to life. Similar to FIRST Robotics Competition, they get a new game each year with new challenges. At the camp, the elementary school students learned basic robot building skills, mission strategy, and programming. This is meant to prepare them for their next season. The camp is run entirely by students from the high school team. It is a great way get the kids excited about robotics while giving the high school students leadership experience. The high school

students guide them through completing as many missions as they can in a week. At the end of the week, the kids demonstrate what they have accomplished in a mini competition in front of their parents. This teaches them how sometimes things don't always happen like they did in practice. Personally, I felt that the camp was a great success and I cannot wait to be involved in it next year.

-Jackson Bahm

CAD Seminar

An important part of the team, is the CAD subteam. CAD stands for computer aided design and the Bionic Blackhawks use this to visualize ideas and design the robot. It determines if those ideas are plausible before money is spent constructing those ideas. For the younger levels of robotics such as FTC, which is for middle schoolers, it is not necessary to design the entire robot using CAD. However, a good knowledge of CAD is often valuable to improve the design of more complex parts. On October 4, several members of the CAD team spent four hours showing them how to use PTC Creo, the CAD software we use. We

taught them some basic functions and also helped them assemble a basic chassis for an FTC robot. Creo is a challenging software to learn but the students proved to be able to learn a lot of the basic tools very quickly. Ultimately, we hope that the students will be able to apply those skills to their FTC teams and thus help improve their robots.

-Hilary Lam

International Girl Scouts River Crossing

The Bionic Blackhawks went to the 50th Annual International River

Crossing. The River

Crossing is an event for the girl scouts from the

United States and Canada to meet up and explore STEM fields. We went with 3 students and a mentor. Our team went with an all girls team from one of our middle schools, the Purple Protons. We had a table that we shared with the Protons. We brought our 2016 Stronghold robot because of how good it is in grass. The 2016 robot also is fun for outreach events because it

shoots balls that younger kids like to catch. Our team also brought lego models to show to younger kids how gear ratios work, which they really liked. There were three of them, one for low to high gear ratio, one for high to low gear ratio and a last one for the same gear ratio. We then wrote questions for them like “Which one would you want for a fan on a hot summer day?” and “Which one do you

think would be best for making energy?” The Girl Scout River Crossing was a really successful event to get young girls interested in STEM fields.

-Charlie Polito



Magna Troy Coalition

As part of our partnership with Magna, we were honored to assist with their STEAM camp in Troy, in the heat of July. We were joined by Robostangs from Northville, for a demonstration to elementary school students of what is in store at the High School level of FIRST robotics. Already we encountered students in Jr. FIRST Lego League, and they were excited to see the robots they one day would be building. We explained the competitive style of play for FIRST Robotics Competition, and how it was the only sport where we could all go pro.

Events like this are great for working with our partners to help the community. The camp at Schroeder Elementary was free to any students in the area, and that day the students learned a lot about STEAM programs, and the opportunities available for them in these fields. We spoke regarding the roles of students on a FIRST Robotics Competition team, and we got the chance to learn a bit about the Robostangs. Their team has a structure not unlike the Bionic Blackhawks, and they are proud of their Chairman’s award in such a competitive era for FIRST robotics. Even

examining their robot was interesting, as their engineering practices are very different from ours. Strategy dictates design, and with the same strategy, there are still many different designs. I could appreciate their focused design, with their minimal points of failure even with many different engineering practices.

It takes a different appreciation of STEAM to see the diversity of the challenge, even when everyone gets the same rulebook. This applies beyond the game, as the cause of fair competition is diversity. Diversity of thought, collective focus, and competition are all lessons that students in robotics learn to be the fact of collaborating to form a team as the finished product. These lessons I feel each of the campers at Schroeder Elementary will come to face in life. I could see the hope and excitement in the campers that one day, that they would be the ones standing where we are, as a team of diverse goals, but sharing the common goal of having fun and learning.

-Peter Juncker

Full STEAM Ahead

The Bionic Blackhawks have started a new initiative to bring STEAM into the classrooms in their school district and all over the world. *Full Steam Ahead* is a cable tv show --recorded and edited by members of the team-- that outlines STEAM careers and do-it-yourself activities for elementary school students. The year long, 4 episode seasons aired on a local TV station focus on 3 things: a fun experiment or demo that the kids can follow and recreate at home, an interview with someone from an interesting STEAM career, and a question that prompts the kids to answer on the website,

Team2834.com, for the chance to be featured on the next episode and win a prize.

The goal is to make STEAM fun for young children and show them how they can be involved once they get older. The engaging demos are great for the short attention spans of children and outline not only how to get results, but why they work. This gets them kids involved in STEAM activities early on and helps them understand how the world functions. They incorporate all elements of STEAM to show kids how diverse the field can be and how many jobs fall under the STEAM category.

-Aaron Murray



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