2014

#3928
Team Neutrino

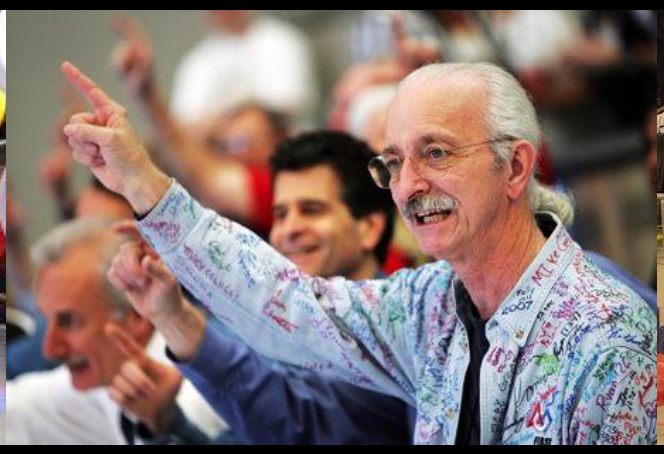
aerial assist℠

What's FIRST?

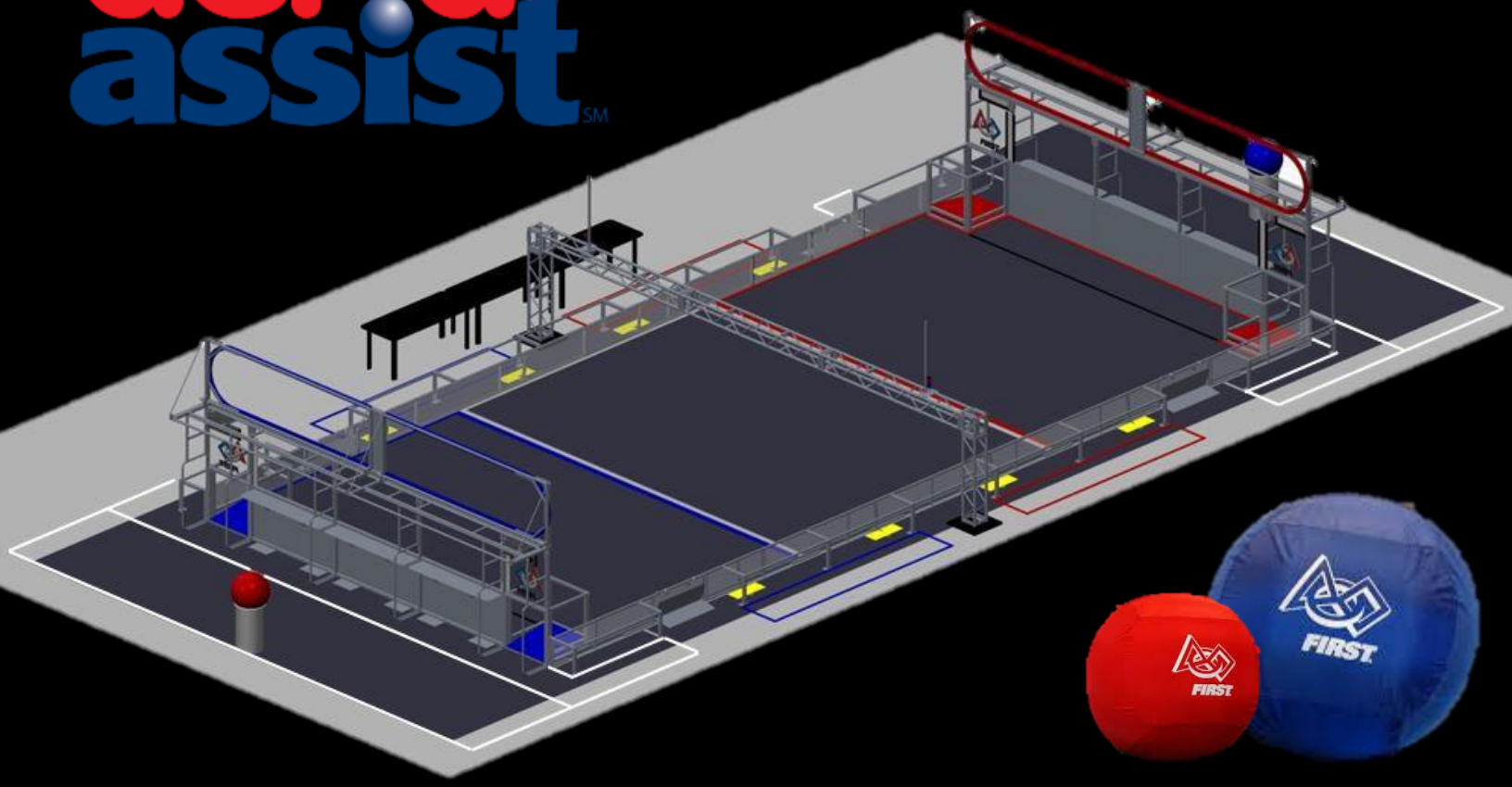
FIRST® is a not-for-profit organization that designs fun, motivational programs to help young people aged 16-18 discover and develop a passion for Science, Technology, Engineering, and Math through challenging robotics competitions.

The Mission of FIRST

to inspire youth to be the science and technology leaders of tomorrow by engaging them in exciting Mentor-based programs that build their skills, inspire innovation, and foster well rounded life capabilities including self confidence.



aerial assist SM



AERIAL ASSISTSM is played by two competing Alliances of three robots each on a flat 25’ x 54’ foot field, straddled by a truss suspended just over five feet above the floor. The objective is to score as many balls in goals as possible during a two (2)-minute and 30-second match. The more Alliances score their ball in their goals, and the more they work together to do it, the more points their Alliance receives.

The match begins with one 10-second Autonomous Period in which robots operate independently of driver. Each robot may begin with a ball and attempt to score it in a goal. Alliances earn bonus points for scoring balls in this mode and for any of their robots that move in to their zones. Additionally, each high/low pair of goals will be designated “hot” for five seconds, but the order of which side is first is randomized. For each ball scored in a “hot” goal, the Alliance earns additional bonus points. For the rest of the match, drivers remotely control robots from behind a protective wall. Once all balls in autonomous are scored, only one ball is re-entered in to play, and the Alliances must cycle a single ball as many times as possible for the remainder of the match.

With the single ball, they try to maximize their points earned by throwing balls over the truss, catching balls launched over the truss, and scoring in the high and low goals on the far side of the field. Alliances receive large bonuses for “assists,” which are earned for each robot that has possession of the ball in a zone as the ball moves down the field. Points are awarded for each action per the table
below.

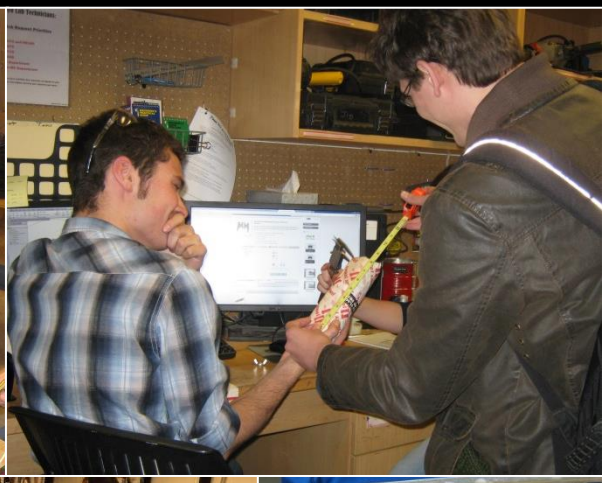
Team History

Team Neutrino started with one of our students being invited to attend the FIRST Minnesota North Star Regional by her grandfather, a mentor on team #2977. After being inspired by the mission, community, and the competition, she decided it would be great to have a FIRST Robotics team in her area. She began with her school's engineering club and writing a proposal to the principal. After gaining permission, it became apparent that the team needed a coach, mentors, and funding. With the help of her mother, they applied for the JCPenney's grant for rookie teams. After contacting the regional director for this information, they connected with a student at Iowa State University looking to start a FRC team. It was a match made in heaven. The team then started having meetings before gaining students to work out the details like how the team would run and space and funding issues. After this, the team was ready to add students. They spread the news that Ames, Iowa had brought back a FIRST Robotics team. Neutrino then gained the dedicated mentors, students and coach they have today.

After the 2012 season was over, the team's main workspace at Ames High School was disbanded so alternative plans were needed. Fortunately enough for the team, they were invited to join the Story County 4-H Program as Iowa's FIRST 4-H FRC Team! The team was excited to partner up with ISU Extension Outreach for that year, as well as all future years.

Meet the Team!



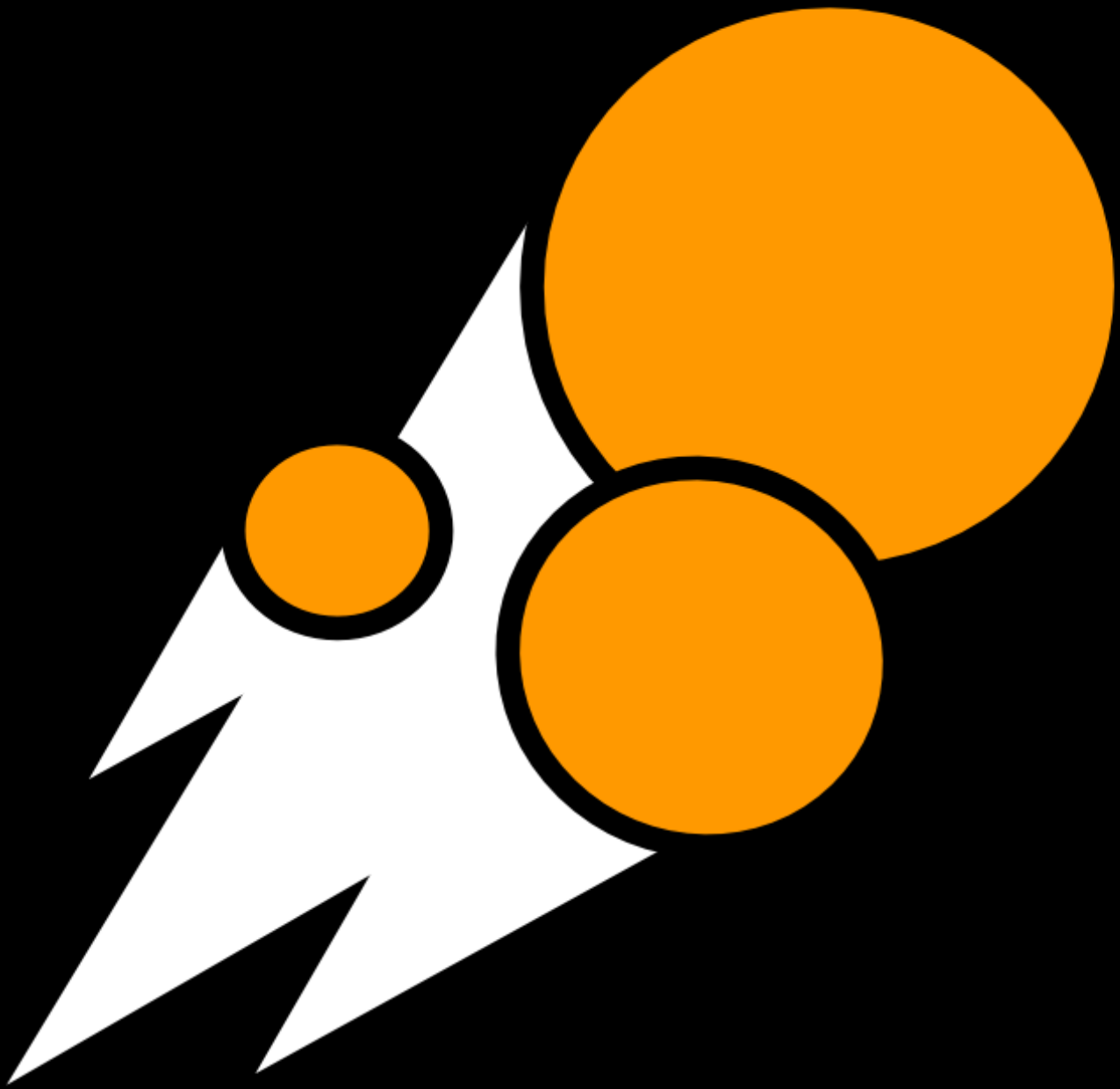









2014



Build Season

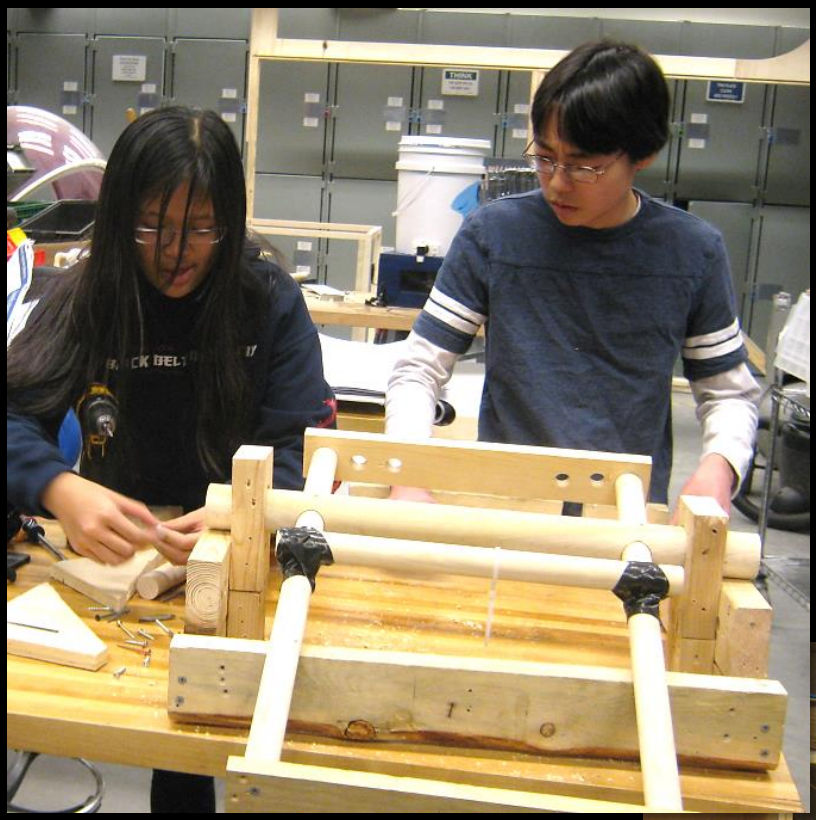
2014 Kickoff

Kickoff marks the start of the 6 week build season. The team watched the live stream from NASA then started brainstorming about how to play this year's game, Aerial Assist.

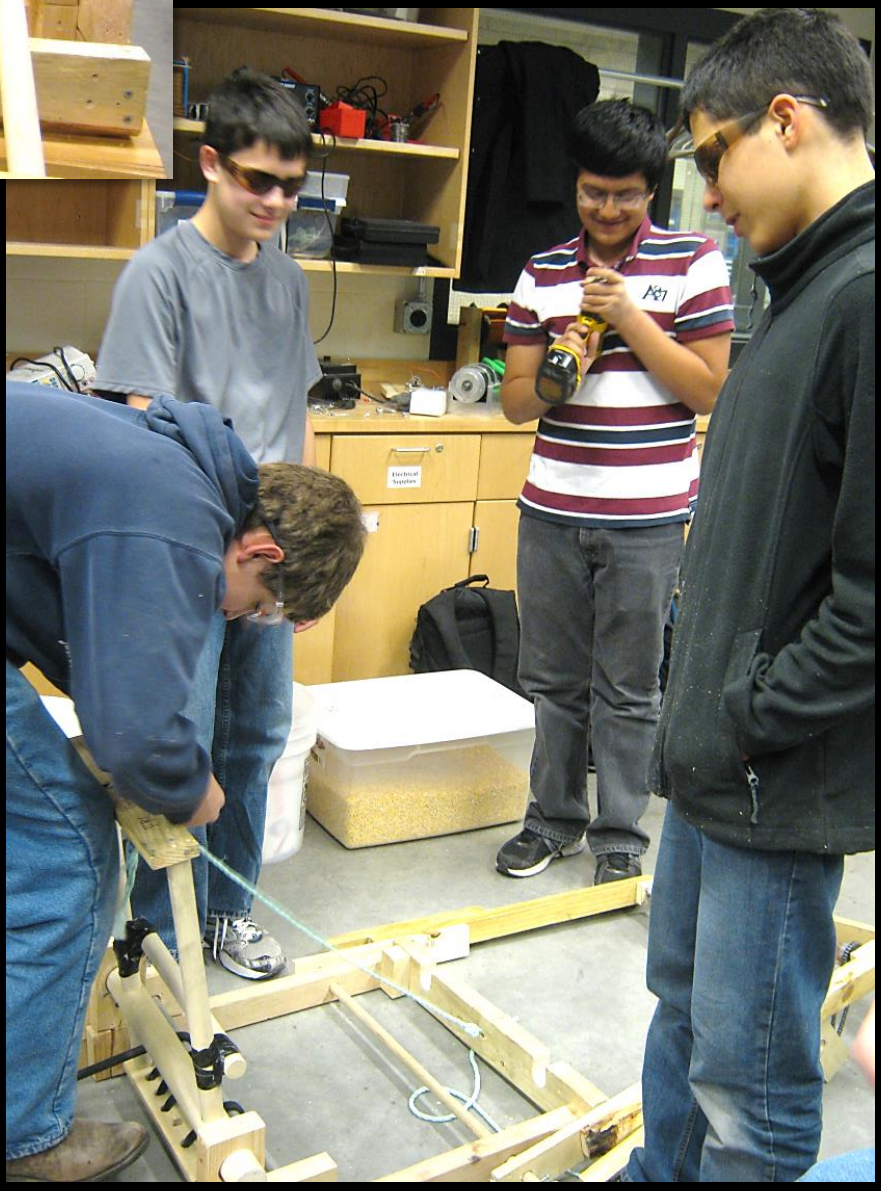
Pieces of the playing field were build to use when testing and driving the robot.

Building the Playing Field

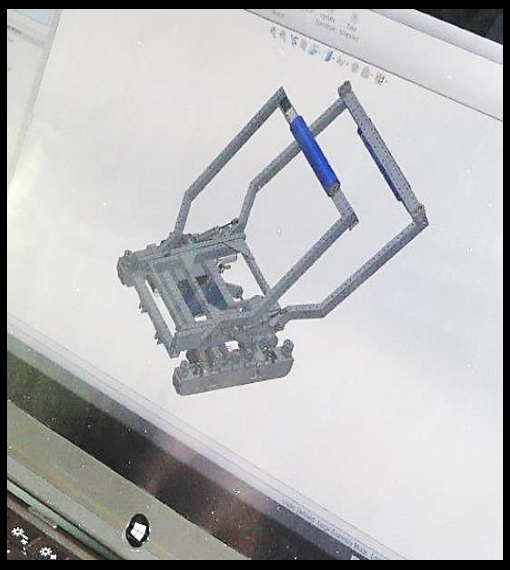
Prototyping



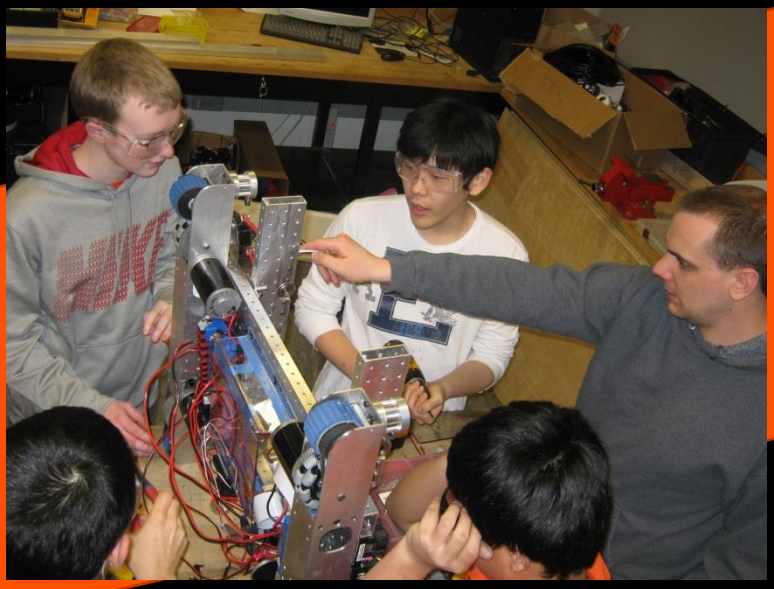
Multiple shooter ideas were prototyped to figure out which would be best to launch the balls.



After deciding on a strategy and basic concept, the robot design was drawn using a CAD program.



Making Parts for the Robot

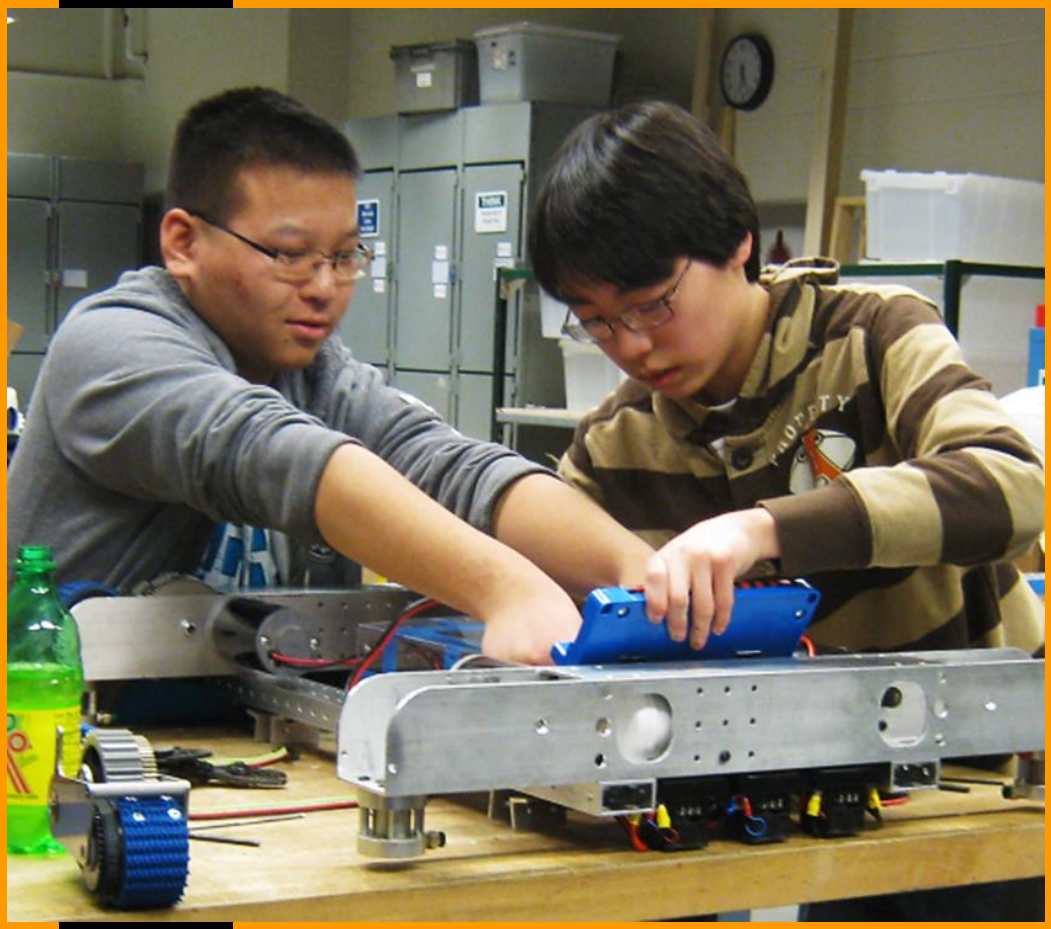


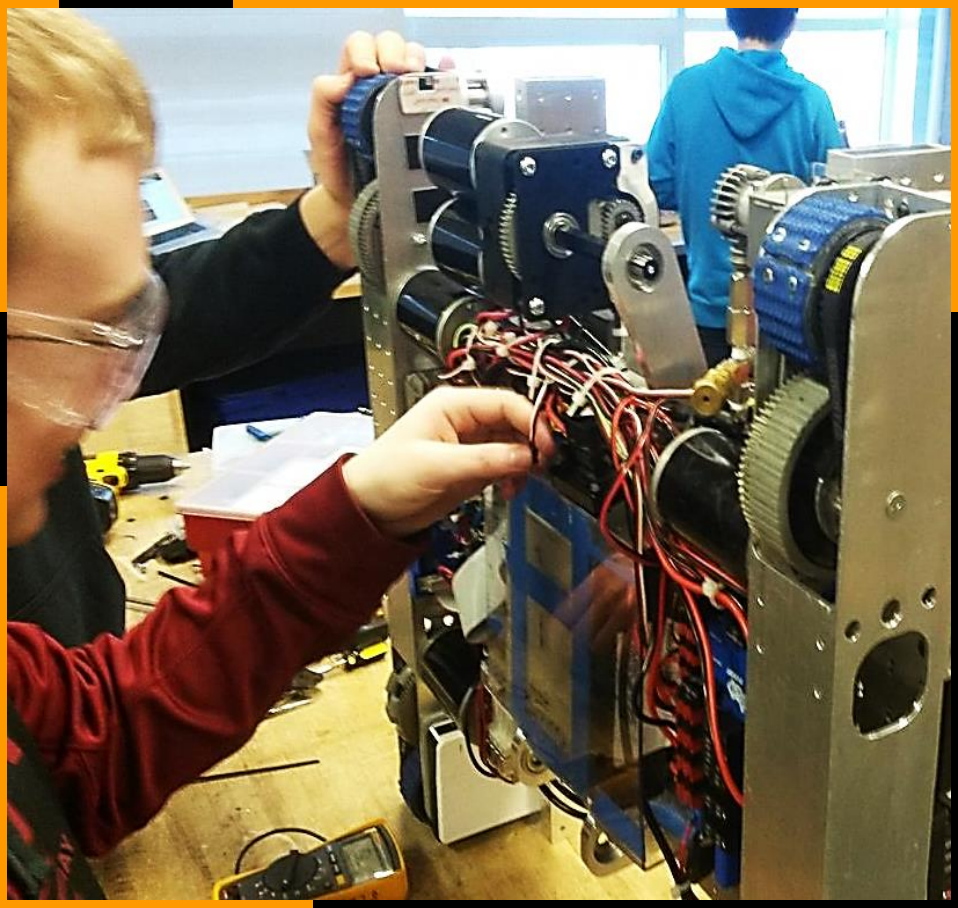

Ellis


neutrino

Drivetrain

Programming and Wiring

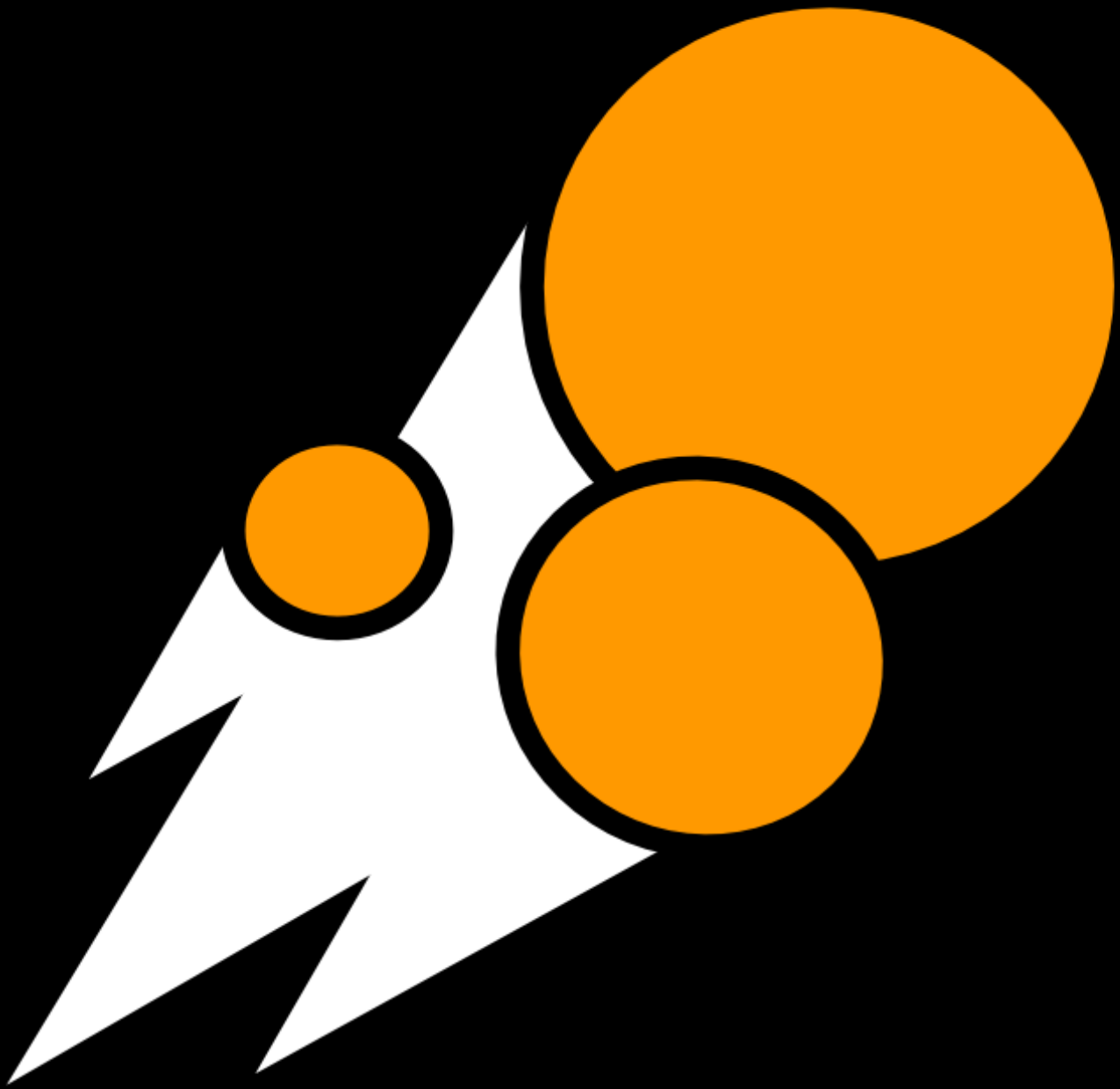




All 6 Iowa teams gathered together to practice driving their robots.

Scrimmage with Team #525

2014



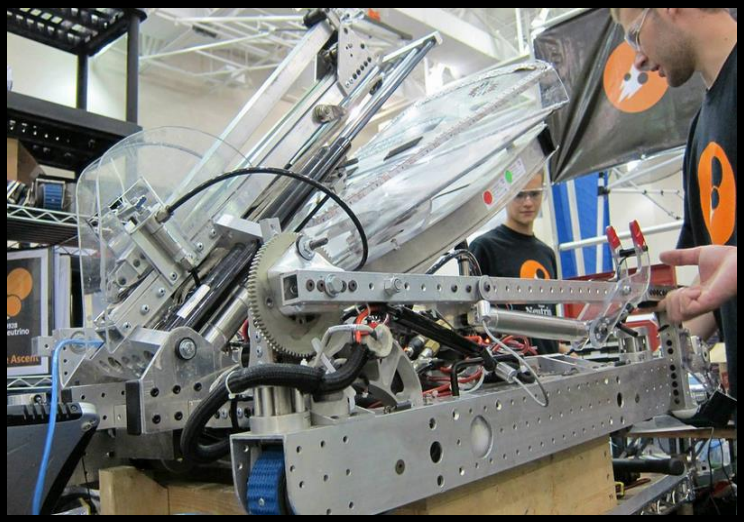
Off-Season

Off Season

- Cow Town Throw Down
- Indiana Regional Invitational (IRI)
- Ames Middle School FLL Presentation
- FLL Iowa State Championship
- Iowa State Fair
- Super Summer
- STEM Day
- VEISHEA
- Coldstone Creamery

Cowtown Throwdown


LAWRENCE
1640




3928
SAUER DANFOSS
JOHN DEERE
CAT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Neutrino

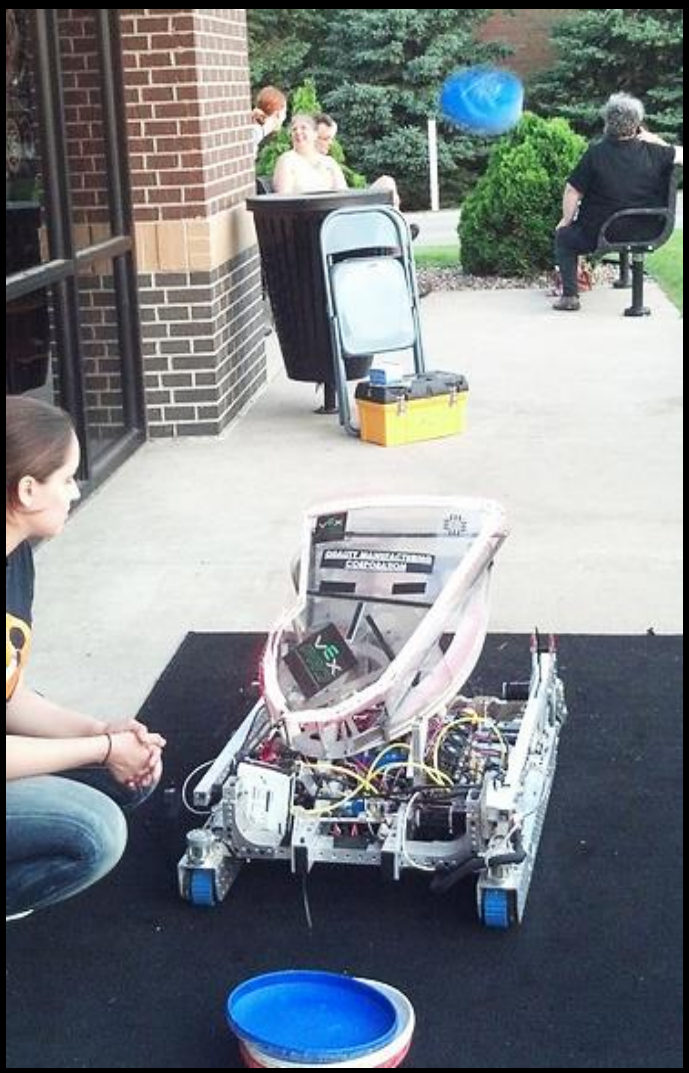
Ames Middle School FLL Presentation

Iowa FLL State Championship

Team Neutrino demonstrated the robot to FLL teams and visitors at the Iowa FLL State Championship, those on the team who did not help with FRC worked in the lab.

Iowa State Fair

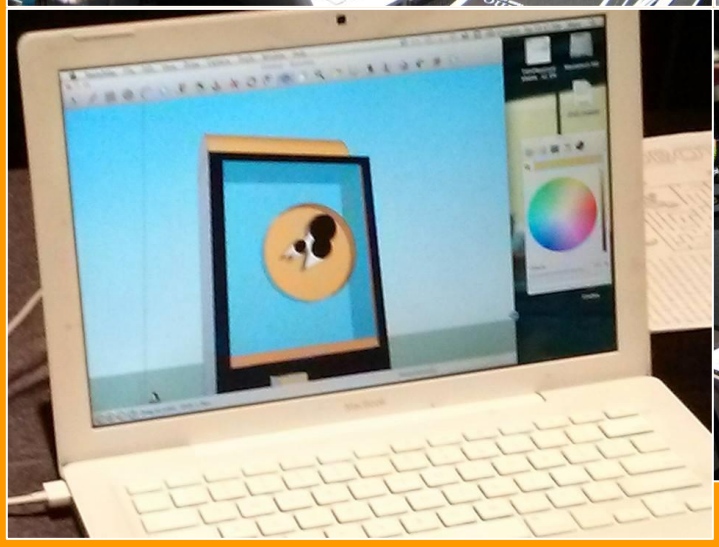
VEISHA



This summer, Team Neutrino did a fundraiser at Cold Stone Creamery where we were able to demonstrate our robot to several people.

COLD STONE
CREAMERY

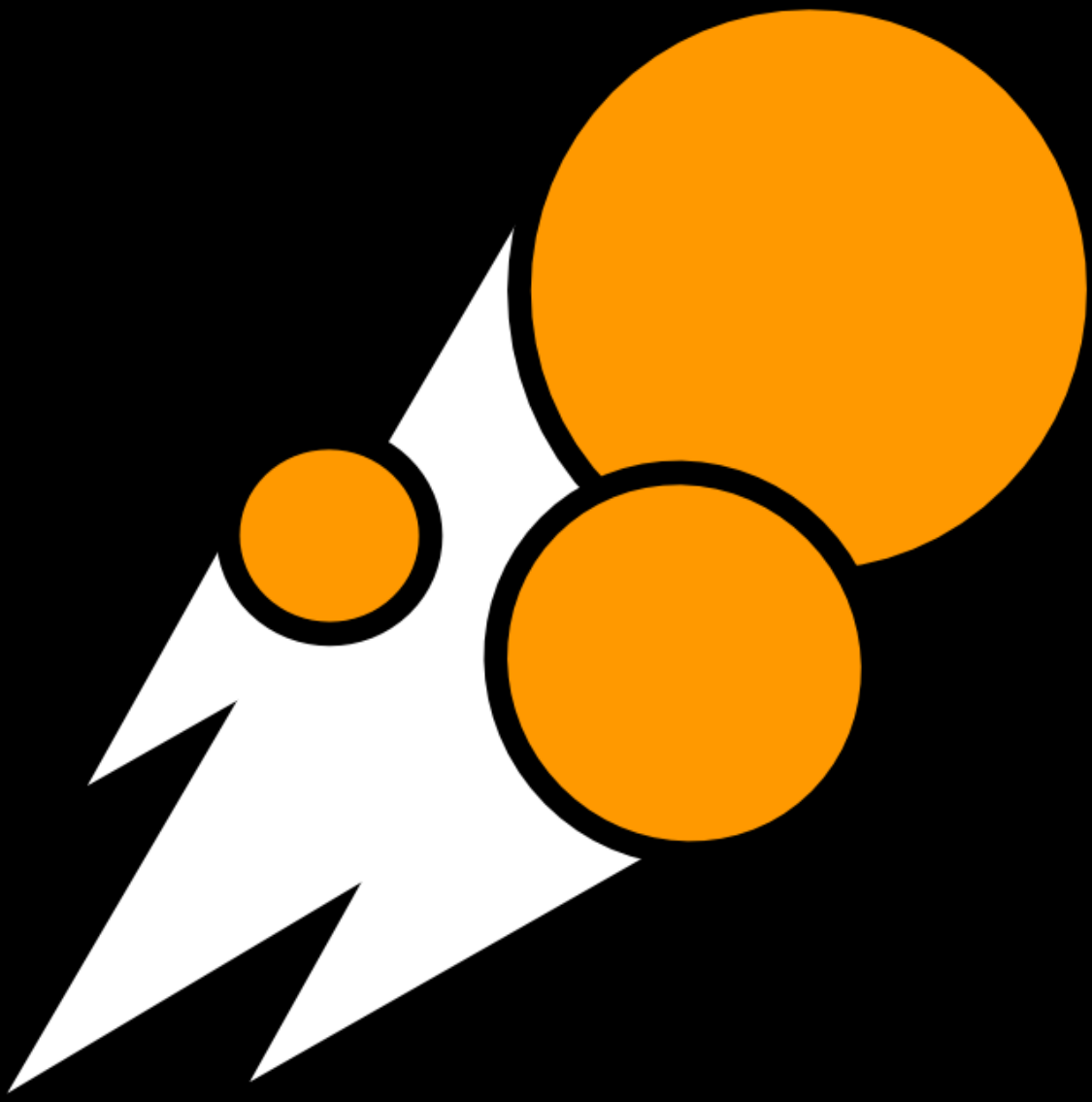
SCI's Women in Science Event



A few members of the team went to the Science Center of Iowa to show Google Sketchup and Explain 3D modeling.

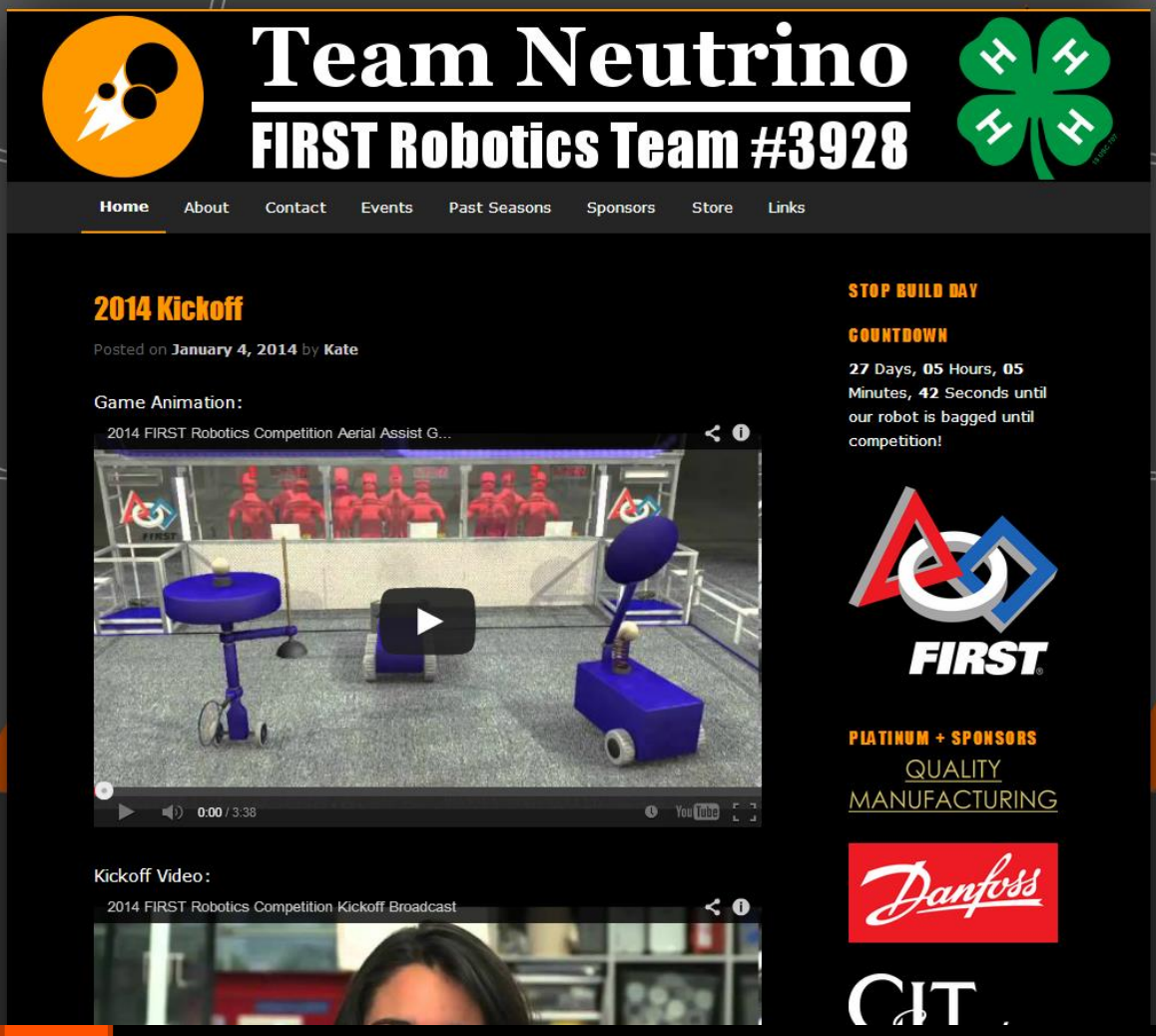
SCI SCIENCE CENTER OF IOWA & BLANK IMAX® DOME THEATER

2014



Marketing

The Website



During the 2013 season Team Neutrino developed a website (www.teamneutrino.org). The website offers more information about the team as well as other helpful information on areas relevant to the team.

Just a couple of the useful links offered from the site. There is also a blog about what the team is currently doing, check it out online!

Team Neutrino

FIRST Robotics Team #3928

Home | **About** | Contact | Events | Past Seasons | Sponsors | Store | Links

About Us

What is FIRST

FIRST® stands for **F**or **I**nspiration and **R**ecognition of **S**cience and **T**echnology.
The mission of FIRST is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well- rounded life capabilities including self- confidence, communication, and leadership.
Founded by Dean Kamen in 1989, FIRST develops accessible, innovative programs to motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

What is FRC

FRC is the highest level of FIRST, the **F**IRST **R**obotics **C**ompetition. Each

STOP BUILD DAY COUNTDOWN

27 Days, **05** Hours, **02** Minutes, **41** Seconds until our robot is bagged until competition!

FIRST

PLATINUM + SPONSORS

QUALITY MANUFACTURING

Danfoss

CIT Signature Transportation

JOHN DEERE

Tri Fold Brochure

What is FIRST Robotics?

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For more info on FIRST
www.usfirst.org

For more information about our team visit our website at:

www.teamneutrino.org

Team
Neutrino
FIRST Robotics Team #3928

www.teamneutrino.org

The robot above was designed to play a game using Frisbees. Students of the team work together to create complex systems to help the robot best complete the challenge. Below is a picture of a butterfly module, which gives robot two modes, a traction mode for pushing other robots, and a mode for speed.

About Team Neutrino

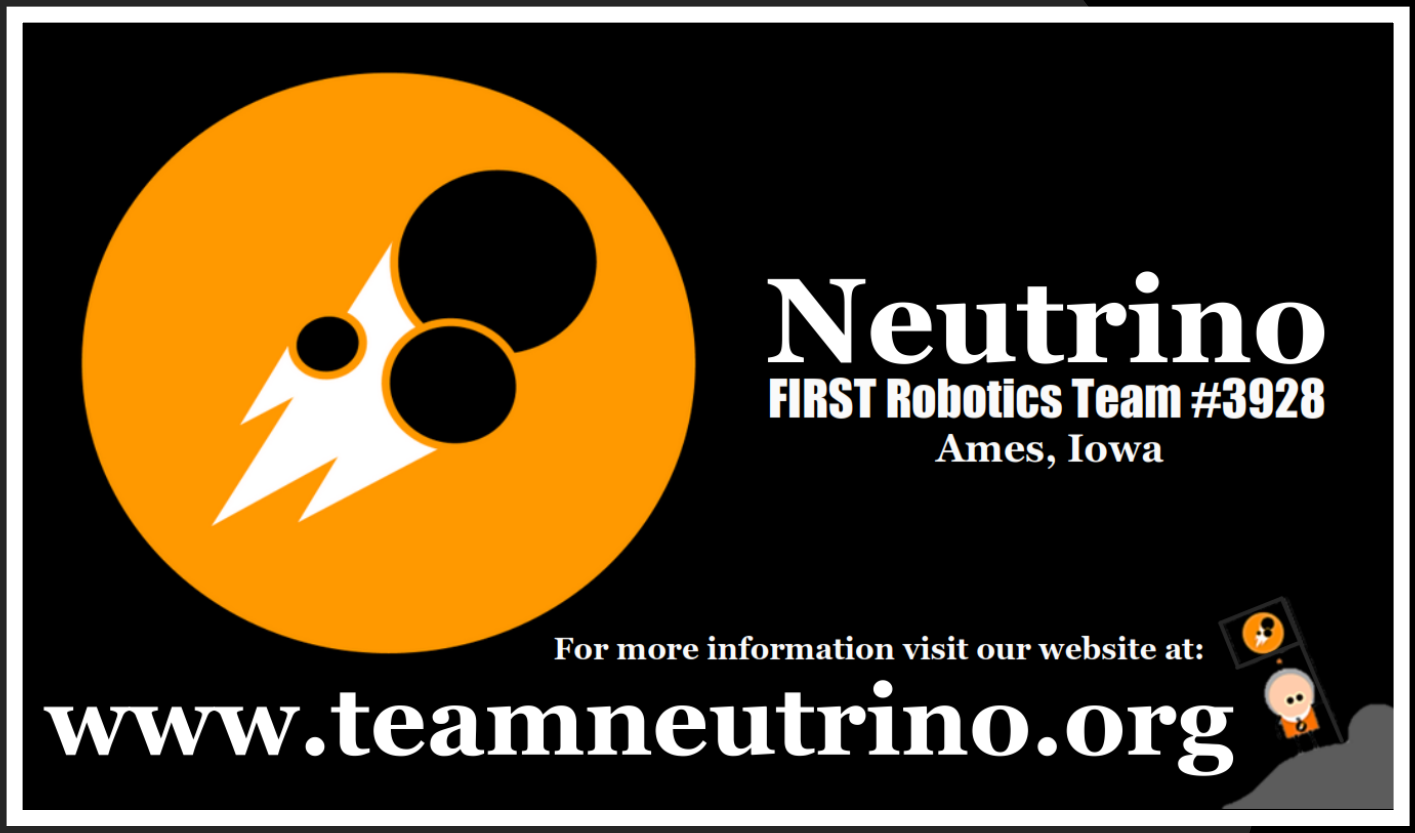
Team Neutrino faces the exciting challenge of building a robot to compete in FIRST Robotics Competition events. The team is composed of high school students from the Ames, Ballard, and Nevada area . Each year a new game is released in the first week of January. The students have 6 weeks to design, build, and program the robot. Students work along-side mentors to solve problems and learn about the field of engineering. Students are also responsible for marketing the team, creating a positive team image, designing a website, and fundraising. Team Neutrino students also volunteer their time to community events such as mentoring children through summer camps, providing robot demonstrations and doing community service projects.

A unique varsity Sport for the Mind™ designed to help high-school-aged young people discover how interesting and rewarding the lives of engineers and scientists can be. Throughout the FRC experience, students gain maturity, build self-confidence, learn teamwork, and gain an understanding of professionalism. They learn skills along the way that all but guarantee them extraordinary career opportunities.

Community support and sponsorship is important to maintaining a sustainable team. Selling the FIRST Green e-watt saver LED light bulb is one of the ways the team works to raise money for registration fees, robot parts, and competitions. These light bulbs last 33 times longer and are 80% more efficient than a standard light bulb. If you are interested in these light bulbs or sponsoring Team Neutrino, visit our website.

This brochure was developed as a way to educate the community about our team, FIRST Robotics, and the Mission of FIRST.

Business Card



A business card was designed to direct people to the website to learn more about the team. The front has the logo, name, and number, and the back is plain white for use of writing on and other information if needed.

Buttons for the team as well as buttons for mentors of Team Neutrino were designed and made to hand out at the competitions.

Button Design

Team
Neutrino

The front of the Shirt remains the same from year to year, and the back is updated with the sponsors for each year.

FRONT

BACK

3928

"It's the Varsity sport for the Mind."

Danfoss

QUALITY MANUFACTURING CORPORATION

JOHN DEERE

CIT Signature TRANSPORTATION

CITY OF ames

SolidWorks

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Shirt Design

Sponsorship Thank You Poster

Thank you for supporting

Team Neutrino

To inspire youth to be the science and technology leaders of tomorrow by engaging them in exciting mentor-based programs that build a variety of skills, inspire innovation, and foster well-rounded life capabilities including self-confidence and leadership.

FRC Robotics Team #3928

2013

www.teamneutrino.org

Sponsorship Letter

Neutrino
FIRST Robotics Team #3928

To our business community,

I'm a student from FIRST robotics team, 4-H Team Neutrino #3928.

FIRST stands for "For Inspiration and Recognition of Science and Technology". FIRST aims to inspire and motivate students to pursue education and careers in science, technology, engineering, and math through robotic competitions. At the beginning of each year, a new game is introduced and FRC teams have 6 weeks to build a five-foot robot that weighs 120 pounds. If you would like to know more about FIRST, please visit www.usfirst.org.

Team Neutrino is a third season high school community robotics team located in Story County, IA. We are also affiliated with 4-H and ISU College of Mechanical Engineering. This year, about 25% of the students on our team are girls. They are active participants in all aspects of building, marketing, outreach, etc. In March, our team will be attending one three-day long regional competition in Minneapolis, MN. Teams that place in Regional Competitions attend the International Championship, hosted in St. Louis, MO. For more information about our team, visit www.teamneutrino.org.

If we reach our goal of $16,500, we plan on using it to cover the costs of registration ($6500), robot parts and electronics ($5000), and other miscellaneous costs such as travel/lodging ($2500). We hope to qualify for the Championship Event in St. Louis, which would require us to raise even more money ($5000 for registration).

We appreciate any contribution to the team. Not only does the team need monetary support, we are in need of marketing materials, tools, mentors, fabrication of parts for the robot, and community support. Any contribution is greatly appreciated, and to say thank you we advertise your support wherever we go through our levels of sponsorship:

Diamond ($5000+) - Large Logo on Robot and Banner + Platinum Advantages
Platinum ($2500+) –Small Logo on Robot + Gold Advantages
Gold ($1000+) – Small Logo on Banner + Silver Advantages
Silver ($500+) – Logo in Pit and on Team Shirts + Bronze Advantages
Bronze ($250+) – Mention on Team displays + Honorable Mentions
Honorable Mentions ($50+) - Mention in Team Literature

We appreciate your time and consideration in supporting our team!
Please respond to:

Dagney Paskach
Co-Captain
dagneypaskach@gmail.com
(515)-268-9612

Rose Stammer
Parent Mentor
r_stammer@msn.com
(515)-450-7526

Thank you!
Signed,

Students of Team Neutrino

A letterhead was designed and used on team documents. Above is a letter used to inform businesses about sponsoring Team Neutrino.

Open House Program

2014 Robot Open House

Neutrino

FIRST Robotics Team #3928

During the past 6 weeks the team has been hard at work designing, building, and programming a robot to perform this year's game, Aerial Assist.

Conor Albinger
Rob Bingham
Tifany Chu
Matthew Devig
Kyle Gass
Jeremy Grzywacz
Woo Young Joo
Zhi Li
Kate Murray
Dagney Paskach
Logan Peters
Binaya Shrestha
Bekah Stammer
Rachael Stammer
Timothy Steward
Takeshi Suzuki
Luke Vespestad
Evan Williams

Team Neutrino will be attending the Minnesota North Star Regional (March 27-29). For more information visit www.usfirst.org

www.teamneutrino.org

Howe Hall 6:30-8:30 PM February 23, 2013

FIRST®
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Team Neutrino

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For more info on FIRST www.usfirst.org

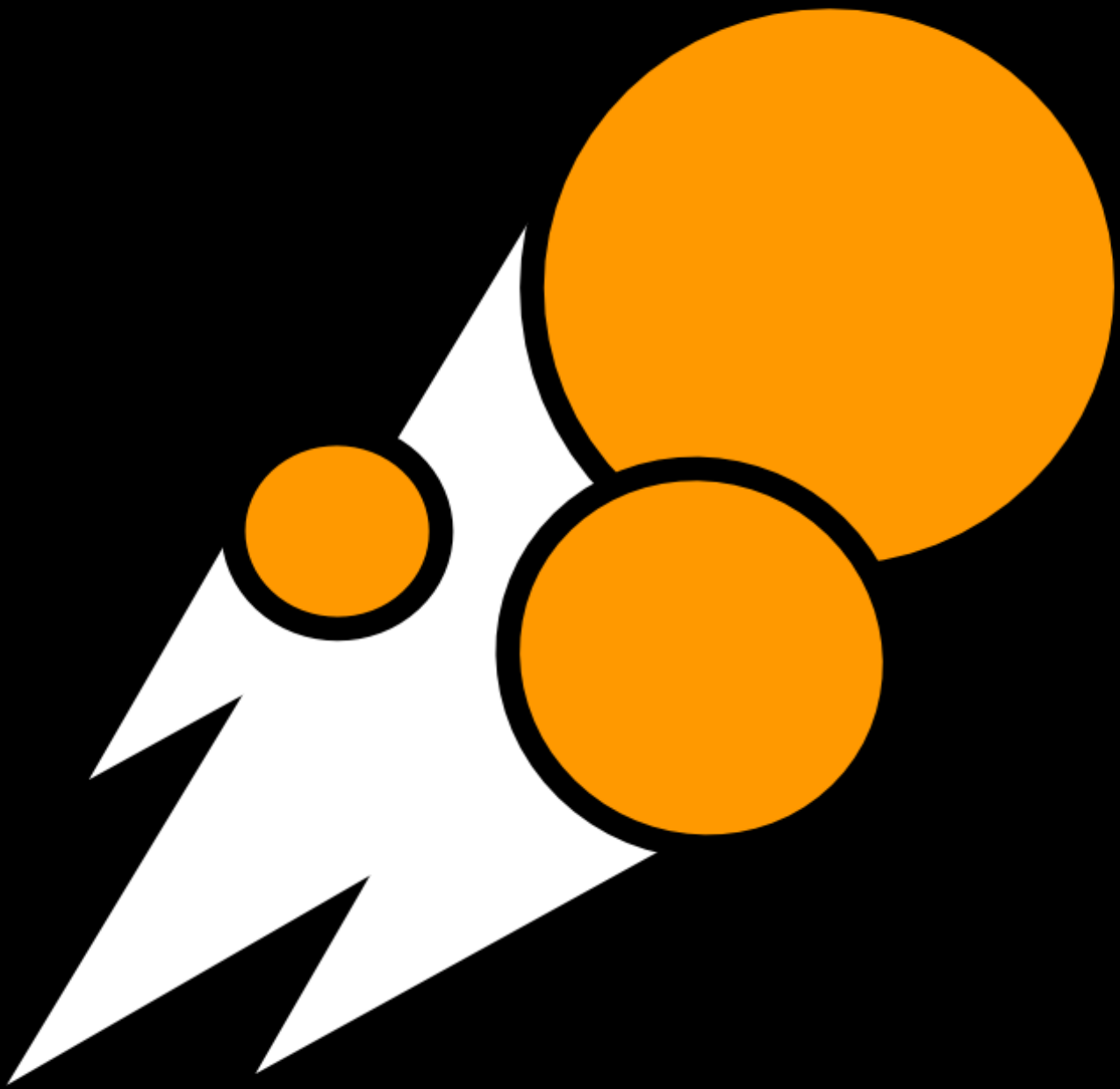
FIRST®

Sponsors

Quality Manufacturing; Danfoss; CIT Signature Transportation; John Deere; City of Ames; Story County 4-H; SolidWorks; Boyd Lab; TSI; Kemin; Emerson; Frontline Bioenergy; Ames Cars

Above is the program that was handed out at the Robot Showcase. The names of students on the team as well as general information are on the front. The back has the current year's sponsors, pictures from the build season, and information about FIRST.

2014



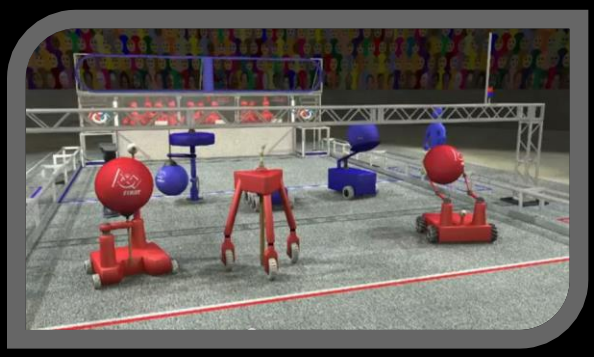
Newsletters

Team Neutrino

Newsletter Week #1

Kickoff

Team Neutrino was excited to watch the global broadcast at this year's kickoff and game, Aerial Assist, on January 4th. We were a bit shocked at how FIRST could come up with such a unique game, but we started reading the rules and brainstorming strategies right away.



Aerial Assist

Aerial Assist is played on a 25' x 54' field. Alliances of three robots each will compete by shooting their ball into their respective goals. There are two 10-point goals and six 1-point goals for each alliance. Robots will assist each other as they try to pass the ball down the field into one of the goals.

Brainstorming

On Saturday, we started brainstorming by figuring out which strategies would score the most points. Then, on Monday, we brainstormed shooter designs, and came up with a catapult and a slingshot idea. We also thought of several pickup ideas, which we also started prototyping.

Prototyping

Thanks to our access to Boyd lab at ISU, we were able to start prototyping this week. We built working wooden models of two of our shooter ideas, and a pickup idea that we can modify. One of our prototypes can be seen in the picture to the left.

Coming Next Week: Next week, we hope to continue CADD'ing, and continue our design process.

Team Neutrino

Newsletter Week #2

Prototyping

Last week's prototype was mainly to see if the overall idea of a slingshot and pickup would work. This week, the goal of our prototype was to match the dimensions of the CADD and test them.

CADD

Now that we have finalized our basic design of our robot, we were able to draw it using CADD on the computer. A few members of the team, as well as some of the mentors made significant progress on this this week.

Business Plan

A business plan was also made to help us organize our fundraising and sponsorship communications. This should help us better understand our short term and long term goals.

Game Elements

For the last two weeks, the parent mentors as well as some student members and mentors built and assembled the goals. These will be essential later for driver practice!

Iowa State FLL Tournament

Thanks to Camille Schroeder of ISEK, Team Neutrino was able to host an outreach booth during Iowa State's Championship FLL tournament. We were successful in getting the FLL kids excited about what comes next after FLL.

Coming Next Week: Next week, we hope to finish our prototype and start the build process.

Team Neutrino

Newsletter Week #3

Chairmen's

This week we finished the outline for the Chairmen's paper, and gathered the items that we will include in the final paper.

CADD

This week, we continued to work on the CADD drawing of our robot.

Building Drive Train and Modules

The pieces of the frame were machined, deburred, and assembled. The butterfly modules were put together nicely, and will soon be put onto the frame.

Button Design

Buttons were designed and ordered to hand out at competitions and outreach events. We also started the robot information card.

Taking Apart Old Robot ☹

Sadly, we had to disassemble last year's robot so we could reuse the more expensive components on this year's robot.

Programming

The programming team started working on the basic programs for the drive train and the shooting mechanism.

Coming Next Week: We hope to finish the drive train, and start machining the rest of the robot.

Team Neutrino

Newsletter Week #4

Frame

Team Neutrino was excited to work on the basic frames for the practice and competition robots this week. This was a main goal for us because now we can begin to add the aspects of the robot that will be unique to this year's game.

Wiring/Electrical

Another major goal for us this week was to wire the robot and secure all of the electrical components onto the frame. Many students and mentors took part in this this week. Next week, we'll do the competition bot.

Chairmen's Essay

We are continuing to make progress on the chairmen's submission, including the essay, four collages, and a video. The deadline is quickly approaching, but we are confident that all the comments and feedback we get will help our application to be of high quality!

Edwards Elementary Science Night

On Tuesday night, Edwards Elementary had their final "Science Night" in their current building. Team Neutrino had the pleasure of showing elementary students our wrap-up video and explaining our modules.

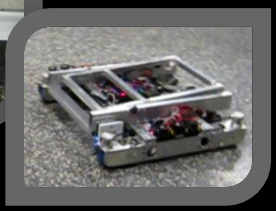
Coming Next Week: We hope to get the real arms, shooter, and ejector working on both bots.

Team Neutrino

Newsletter Week #5

Drive Train for Comp Bot

We tested the drive train in the hallway to make sure that it could switch from traction mode to the standard wheels.

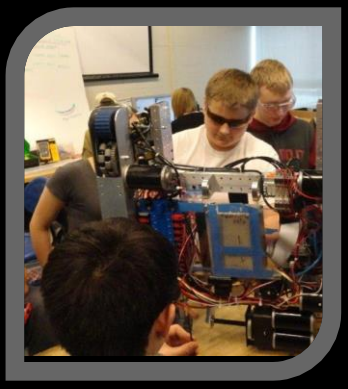


Chairmen's

We are now finished with the picture collages we need to submit, and we have a tentative final draft of the essay.

Sponsor Banner

We began to make the sponsor banner that will be hung in our pit underneath the Neutrino banner. Hopefully, this banner will be able to be used year after year.



Pneumatics

This week, we attached the pneumatics to the robot so the drive train can function.

Arms and Shooter

The arm and shooter were attached to the practice robot this week. It is all quickly coming together, which is good because we only have one more week! ☺

Coming Next Week: Some of the team is travelling to the Iowa Scrimmage, and some are going to the Science Center's Women in Science event next Saturday.

Team Neutrino

Newsletter Week #6

Finished Robot! ☺

Team Neutrino was excited to get their robot able to pick up, drive, and shoot as high as the 10 point goal this week!! Seemingly endless hours spent in the shop every day have truly paid off to produce a remarkable robot that is strikingly similar to a butterfly….

Iowa FRC Scrimmage

Every year, Team #525 Swartdogs hosts an all-Iowa FRC Scrimmage as a practice competition during the last Saturday of build season. Most of the team went down to Cedar Falls to participate in this opportunity. Special thanks to team #525!

Bumpers

For those of you who do not know, every robot is required to have bumpers during the match that match the color of the alliance (blue and red). This week, we cut, taped, and assembled our bumpers so we could have them for the Scrimmage.

525 SWARTDOGS
Cedar Falls High School, Cedar Falls, Iowa

SCI's Women in Science

The Science Center of Iowa hosted a "Women in Science" event this year. Four of our members showed kids how to 3D model in Google SketchUp, and we were set up right next to the 3D printer, so they could see the application of their drawings.

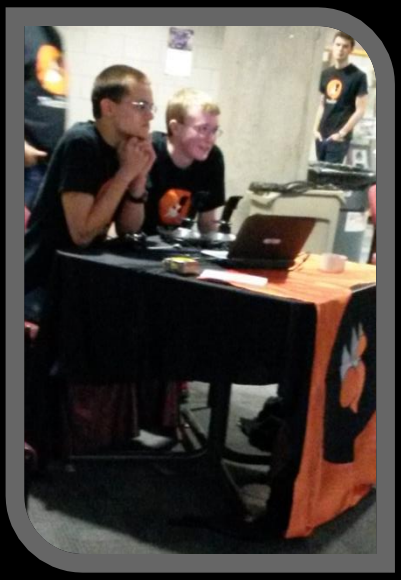
Coming Next Week: We will be unveiling our robot in Howe Hall to the community. Please come!

Team Neutrino

Newsletter Robot Unveiling

Drumroll Please...

On Sunday January 23 from 6:30-8:30 pm at Howe Hall on the ISU Campus, Team Neutrino revealed our robot to the public. Families, Friends, alumni, and the general public were in attendance. They got to meet the team, watch our unveiling video with pictures of us in the shop working on the robot, and seeing the robot explained and demonstrated. Thank you to all who came. Please wish us luck at the Greater Kansas City Regional (March 13-15), and the Minnesota North Star Regional (March 27-29)!



Visit us online: Stay updated during our regionals by going to www.teamneutrino.org.

Team Neutrino

Greater Kansas City Regional

Assembly

We made several changes to our practice robot since bag day, so we had to update our competition robot on Thursday. We got to practice driving it on the field as well.

Dinner with ASAP

Shout out to team 4646 ASAP for a wonderful team dinner - It was great to get to know your team! Good luck next year!

Scouting

The scouting team learned how to use this year's cards on Thursday, and then scouted all day Friday. Everyone was dead tired by the scouting meeting Friday night!

Qualification Matches

On Friday, our team competed in eight qualification matches. We ended up being seeded 5th at the end of Friday. Great job to the drive team!

Alliance Selection

The team's lead scout went onto the field for alliance selection after the end of qualification matches. Team Neutrino ended up being seeded 9th and captains of the 6th alliance. It was great to work with teams 2410 and 3172!

Elimination Rounds

We were quarterfinalists in the elims, and we forced a tiebreaker round with the 3rd seed! This competition was a valuable learning experience, and we look forward to North Star!

More pic's online: The link to our Flickr account is on our website with tons more pic's and vid's!

Team Neutrino

Minnesota North Star Regional

Qualification Rounds

On Friday, our team competed in eight elimination matches. We were seeded 4th in rankings and 1st in Offensive Power Ranking.

Scouting

Shout out to team 2175 for helping us scout the quals! Since we had limited members attending, it was great to have extra people to work with.

Judges

Our senior member talked to the judges about our robot and our team. This was instrumental to our success.

Alliance Selection

The team's lead scout went onto the field for alliance selection after the end of qualification matches. Team Neutrino ended up being seeded 12th and on the 2nd alliance. It was great to work with teams 4244 and 2169!

Engineering Inspiration

Thanks to our highly competitive robot and multiple outreach events, our team won the Engineering Inspiration award, which includes a ticket to Champs paid for by NASA!!

Elimination Rounds

We were quarterfinalists in the elims. Congratulations to teams 3042, 4778, and 2177 for winning the regional, and to team 2169 for Chairman's! We look forward to seeing you all at Champs in April!

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Team Neutrino

FRC Championships 2014

Pure Excitement!

With four FIRST programs, 1200 FRC teams, students from 38 countries , and Woodie Flowers and Dean Kamen all in the Georgia Dome in St. Louis, Missouri, who could contain their excitement?!

Scouting

Scouting was a blast with all of these amazing robots that could all do so much! We hope to see you all at IRI!

Qualification Rounds

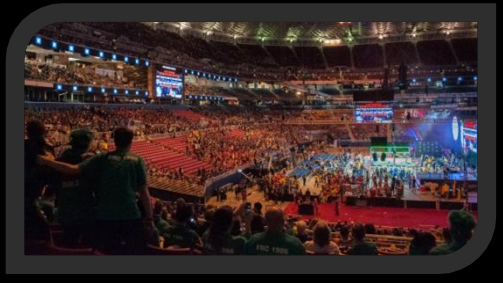
Over the course of three days, we competed in 10 qualification matches. Our team ended up being seeded 38th with a win-loss record of 6-0-4.It was cool to see the four divisions all competing at once!

Alliance Selection

Team Neutrino ended up being seeded 38h and the 4th robot on the 4th alliance. Thanks Titanium, SWAT and Kikimana for choosing us!

Elimination Rounds

We were semifinalists in the Newton elimination rounds. After Team Titanium's robot could not be fixed, we substituted for them and our alliance managed to beat the #1 seed which forced a tiebreaker round! It was great to work with our alliance!



Einstein

Congrats to the Newton finalists and to teams 254, 469 and 2848 for winning the competition!

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