



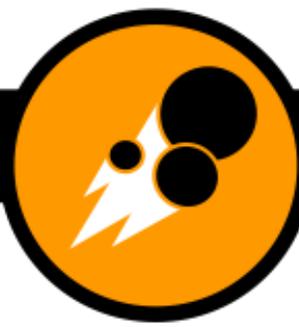
# Team Neutrino

FIRST Robotics Team #3928

## Co-Captain Management System

*By Dagney Paskach*

Co-Captain Oct. 2014-present

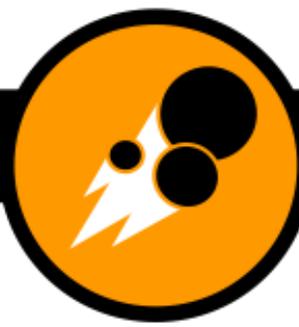


# Team Neutrino

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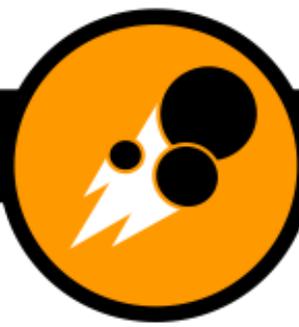
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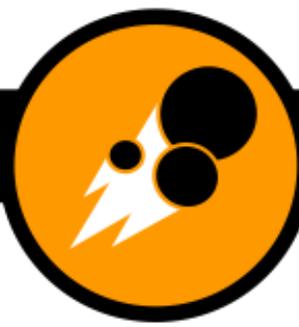
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# Team Neutrino

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## Overview

In this document, I have written up instructions for how to do pretty much everything I did on Team Neutrino. This is meant to be used as a resource for Team Neutrino and other FIRST teams. Please don't hesitate to email me with questions about anything you read here! I'm always eager to help a fellow FIRST enthusiast!

## Past Leadership

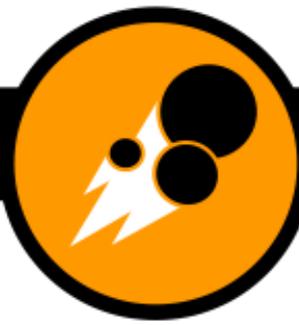
	Lead Mentor	Captain	Co-Captain
<b>2012</b>	Dori Pinkerton	Tyler Witte	Sarah Pinkerton
<b>2013</b>	Tony Milosch	Bojun Song	David Runneals
<b>2014</b>	Tony Milosch	Jeremy Grzywacz	Dagney Paskach
<b>2015</b>	Tony Milosch	Timothy Steward	Dagney Paskach
<b>2016</b>	Tony Milosch	Timothy Steward	Dagney Paskach

## Contact information

Dagney Paskach

(515)-520-2673

[dagneypaskach@gmail.com](mailto:dagneypaskach@gmail.com)



# Team Neutrino

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## Co-Captain Notes

I first applied for the Co-Captain position at the end of my freshman year for my sophomore year. I wasn't sure if I could handle all the work, but Tony told me that he thought I should apply, so I did.

## Position Description

The Co-Captain's role is to oversee all the non-technical aspects of the team. This includes, but is not limited to, outreach events and programs, mentoring FLL and FLL Jr. teams, fundraising, scouting, graphics, photography, social media, and award submissions. The Co-Captain also runs team meetings when the Captain isn't there. I created several manager positions over the summer of 2015 and filled them with underclassmen to help with our team sustainability. The managers were in charge of doing the work, and I was in charge of overseeing everything.

## Weekly Emails

Throughout the entire year, Team Neutrino sends out weekly emails to the team. Either the Captain or the Co-Captain can do this. My freshman year, mentor Katie Widen actually sent the team emails. They are usually sent on Sunday nights, and they include meeting times for the upcoming week, as well as a summary of upcoming events and any other important information. Be careful not to include too much information in these (I failed at that a lot) because people will stop reading them if they get too long. Refer to the Event Planning and Documentation binders for examples of past team emails.

## Team Hard Drive

Team Neutrino has way more than 16 GB of information now, so instead of having four separate flash drives, Tony donated a 1 TB external hard drive to the team. You can open files from either a Mac or Windows, but you can only add/delete files from a Windows computer (annoying—I know). I organized the hard drive loosely based on our manager positions. The folder tree is displayed below. Please note that it is very important to have files stored in two places; thus, we have (almost) all the pictures that are stored on our Flickr simultaneously stored on our hard drive.

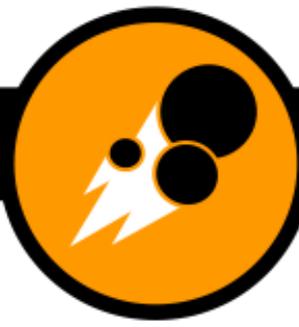
**00-Co-Captain** (documents specific to team organization)

Co-Captain Binder Labels

Team Roster Form

**00-Handbook** (handbooks since Rebound Rumble season)

**01-Scouting** (each game has its own folder, which includes the following)



# Team Neutrino

**FIRST Robotics Team #3928**

Quantitative Data Table (Excel and PNG)

Scouting Card (Word and PDF)

Scouting Card Explanation (Word and PDF)

## **02-Graphics** (handouts and marketing materials)

Annual Report

Apparel

Brochure

Bumper Numbers

Business Card

Buttons & Stickers

Copies for Website Resources (versions we posted online in fall 2015)

Identity Standards

Invitations & Event Programs

Neutrino Guy Vectors

Newsletter (separated by volume)

Pit Binder

Robot Card

Sponsor Recognition (each year has the following)

Sponsor Poster

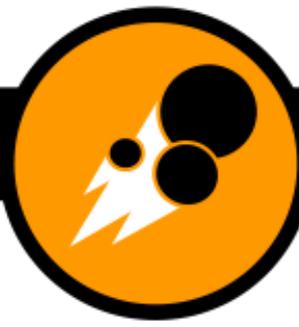
Sponsor Robot Stickers

Sponsor Banner

Templates

## **03-Awards**

Chairman's



# Team Neutrino

**FIRST Robotics Team #3928**

Dean's List

Entrepreneurship (Business Plan)

Judges' Packet

Woodie Flowers

## **04-Fundraising**

Copies for Website (versions we posted online in fall 2015)

Eco Fair (list of things to bring to the Eco Fair)

FIRST\_Green\_FAQ (information about FIRST e-Watt Saver Light Bulbs)

Grants & Proposals (includes all grant proposals and company-specific sponsor letters)

Invoices

Sponsor and Partner Logos and Guidelines

Black and White

Color

Rules and Guidelines

Sponsor Packet

501(c)3 official status letter

Sponsor Contact Sheet

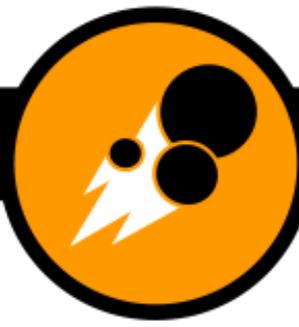
Sponsorship Packet with Information (4-Page Brochure)

Sponsor Letter (all versions of sponsor letter)

W-9 Form

Thank-You Materials

Thank-You Paragraphs Composite (Official Annual Sponsor  
Thank-You Letter)



# Team Neutrino

**FIRST Robotics Team #3928**

Thank-You Poster

Thank-You Card

## **05-Public Relations**

Presentations (PowerPoints for Robot Reveal, sponsor visits, demonstrations and outreach presentations)

Press Releases

## **06-Pictures&Videos**

Folder for each year

Background pic (website background image)

FIRST logos

Team Neutrino logos

## **07-FIRST Lego League**

## **08-FIRST Lego League Jr.**

Sample Season Schedule

Edwards, Fellows, and Sawyer each include the proposal to start FIRST Lego League Jr. at their school. Edwards also includes Club Proton

## **09-Safety**

Safety Animation

FRC Team Safety Manual

Team Neutrino Safety Manual

## **10-Outreach**

Engineering 0.101 (how to run the camp)

LEGO Mindstorms Robotics (how to run the camp)

Maker Tech Camp journal (Word and PDF for beginner and advanced classes)



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Maker Tech Camp Teacher Guide - Advanced (how to run the camp;  
Word and PDF)

Maker Tech Camp Teacher Guide - Beginner (how to run the camp;  
Word and PDF)

## **Misc. for Each Season**

### **Team Google Drive**

Like I mentioned above, we try to have copies of our documents in two places. I don't like to put editable versions of documents in our Google Drive since you can't be sure you are the only one editing them like you can if you have complete control of the hard drive. Instead, I usually will upload PDFs. If I want someone to edit a document on the hard drive, I'll email it to them.

On our google drive, we have a folder for each season. Beyond that, the organization is not uniform; it is unique to each team that year. You can base each new season folder off of last year's if you want.

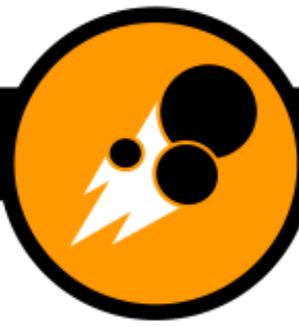
The Captain, Co-Captain, and coach should share *all* the season folders with themselves. You never know when you might need to look at the Chairman's essay from three years ago, or some documents from our rookie season! :)

### **Co-Captain's Binder**

Although I don't post a second copy of all our team documents on Google Drive, I do print out all the vital ones (if not all documents, period) and keep them in a binder. There was honestly a point during my senior year when I had about 15 binders purely devoted to Team Neutrino stuff on a shelf in my bedroom.

I make a new binder for each season called "Team Neutrino / Co-Captain's Binder / 2015-2016." In the binder, I have a set of 15 Avery <serial number> tabs (which I absolutely love—they're so pretty!) labeled with these sections:

1. Handbook
2. Roster (including mentor, member and parent phone numbers and addresses)
3. Member Information Sheets (hard copies of the team information sheets I have everyone fill out at the "New-Trinos" informational meeting and/or kickoff)
4. Business Plan



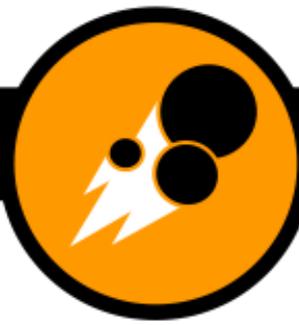
# Team Neutrino

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5. Identity Standards
6. Chairman's Submission
7. Other Award Submissions
8. Sponsor Contact Spreadsheet
9. Sponsor Contact Details (printed emails and snail mail)
10. Grant Proposals
11. Team Neutrino Handouts (brochure, robot card, etc.)
12. FIRST Handouts
13. STEM Handouts
14. Safety
15. Misc. Information

The table of contents above is on the team hard drive. Make a new document for each year and update the Co-Captain's name. I continually keep this updated throughout the year. My family bought a black and white laser printer and a color laser printer from ISU surplus for a very low cost, and now I don't feel guilty printing reams of information.

Since Preseason starts on September 1, I transition to a new binder then so that all the hard copies of the grants for the new year will go into that binder.



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## **Scouting**

My first time scouting was at Cow Town Throw Down of my freshman year. At that time, our team's scouting system consisted of just a pen and paper, and it was hard to keep all the information organized. Over winter break, David Runneals emailed me 3929's scouting system, and I used that as an example to create the system Team Neutrino used in 2013.

There are many reasons to scout. The most obvious reason is to gain information about each team so you can make a good decision about who you want on your alliance for the elimination matches. Sometimes the drive team also likes to look at the data and have match breakdowns before each match so they know what the other teams will do.

I HIGHLY recommend going to watch Simbotics' scouting seminar right now. Karthik Kanagasabapathy does a really nice job of explaining everything you need to know about scouting. What I've done here, then, is described things with a lot more application for 3928. (If you're reading this and you're from another team, keep in mind that our system won't work for every team, but Mr. Kanagasabapathy talks about a lot of things that are generally applicable for everyone.)

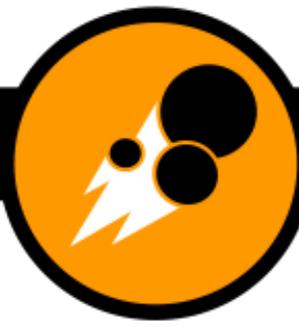
Simbotics' Scouting Seminar: <https://www.youtube.com/watch?v=l8syuYnXfJg>

## **Prescouting**

This is a way to get a little background information on teams before going to competitions. Historically, Team Neutrino has not done a whole lot of prescouting, since we've been able to get sufficient (and accurate) data at the competitions themselves. The one exception to this was 2016, since it was very important to know what defenses teams were capable of crossing. It is still a good idea, however, to watch some matches before your first competition using the live video streams available on the Blue Alliance to get a feel for how the game is played that year.

Since 2015, we've had a scouting prep session a couple weeks before our first competition. We use this to train members interested in being on the scouting sub-team in using the new cards. Here is the schedule for the day:

1. Start 10:00am
2. Watch Simbotics' scouting seminar



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1. how will scouting work for us?
3. go over cards
4. practice pit scouting with partners
5. Watch live video stream of week 2 playoff matches and practice scouting using cards
6. Watch prerecorded week 1 matches (some easy, medium, hard), and have scouting test.
7. Takeshi's scouting app
8. Done at 3:00ish
9. Lead scout and co-captain grade tests and select the scouting sub-team members

The data that we collected during the live video stream wasn't used in the selection process; it was just a way for students to get the hang of the system before being tested.

If you actually want to do good prescouting, you can research the teams attending your next competition using Chief Delphi, the Blue Alliance, and individual teams' websites.

## **Creating the Scouting Card**

To create the scouting card, I start by re-watching the game animation and brainstorming what aspects of a robot would be worth tracking for that year. In 2014, for example, I split up the quantitative data into autonomous and tele-operated modes, and then kept the fouls and total points scored from the 2013 card. I tried to keep the number of columns as small as possible to maximize the size of each box and minimize the complication of finding your spot on the card. In 2015, that resulted in the card being a little complicated to fill out, but because we had the scouting practice session that year, it worked out okay. It's a good idea to plan on using tally marks for stats you'll be writing down during the match, mainly things related to scoring points. Here's a list of things you want to make sure you include (from Simbotics' Seminar):

- Match score
- Points scored by the individual team



# Team Neutrino

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- Scoring attempts and failures (important for getting an accuracy percentage)
- Penalties
- Starting position
- General strategies and tendencies
- Drivers and human players

After I have an idea of what I want to look for, I make a copy of the previous years' quantitative data table (Excel spreadsheet) and make the changes. Then, I take a screenshot of the table. I then make a copy of the previous years' actual scouting card, right-click on the data table, and select "Change picture." I locate the screenshot I just took and put it in the new card.

That's pretty much it for the quantitative side. For the qualitative side, I update the pit scouting table for the new year. The top four rows (wheel type, #CIMS, weight, etc.) stay the same from year to year. After that, you put in rows for tasks you think that robots might be able to do. For 2015, that was abbreviated questions like (Can your robot pick up totes?, can your robot handle litter?, etc.). You want to be as specific with these questions as you can, yet also fit a lot into a small space. Sometimes that requires some creative thinking, like in 2015 with the table.

You also need to update the field diagram. Depending on the simplicity of the field, it might be easier to create your own diagram using Illustrator, snip the diagram off of the game manual, or find one online or on Chief Delphi.

There are also boxes for autonomous notes and tele-operated notes. Basically, you can write the teams' strategy for these two periods in the boxes. If they have more than one strategy they can do, indicate that with bullet points or something. When you're creating the card, you don't have to edit much here.

When the rough draft of the card is done, send it to the drive team and me for comments and suggestions. Alumni are always happy to help, too!

When the final version of the card is done, find the page for your next upcoming competition on the Blue Alliance. Print out a card per team, put the team number in the box on the front side of the cards (and the top right hand corner of the back side), and put the team name right on top of the box.



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## **Pit Scouting**

As soon as you enter the competition venue, send one person to get a paper copy of the pit map (or take a picture of one if that isn't available) and tell them to meet you up in the stands. Have the rest of the scout team who is not needed in the pit follow you to the bleachers to claim a good spot. Then, put the deck of cards in the same order as if you snaked around the pits.

Split the scouts into groups of two and make sure each group has a camera/phone camera and a cell phone. Exchange phone numbers with everyone so you can call them if they're taking too long. Hand a clipboard, a stack of cards, and a pencil to each group. Remind everyone how to fill out the cards, and **TO TAKE PICTURES OF ROBOTS THEY SCOUT!** (get a nice view of robot and make sure team number is in the picture. This can be accomplished by putting the corner of the robot card in the frame of your camera if the bumpers aren't easily visible. This is important because you want to be accurate with the data and get good pictures! It's really nice to have pictures for the scouting meeting so you can remember what robots looked like. When everyone gets back, sort the cards numerically and put them back in the box.

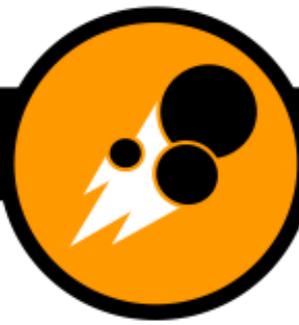
To pit scout, you need to take each card to its team's pit and fill out the back side. Ask the team questions about the items on the back, such as what kind of drive train they have, what their autonomous strategy is, and where they shoot disks from. Note: some team members won't know all of the information, such as how tall their robot is in inches. That's okay. Just keep asking people until you get an answer (or bring your own tape measure).

## **Match Scouting**

It is a good idea to have at least 6-8 team members scouting in the stands during qualification matches, however, you might be able to manage with less at off-season events.

Before the match starts, one scout will pass out the six cards to six scouts (one for each scout, including himself/herself). The scouts will then fill in anything they can prior to the match starting (i.e. alliance color, match number, playing pieces preloaded, etc.). They could also add descriptive details about the robot to make it easier to recognize the next time like "has purple spot" or "neon yellow."

During the match, each scout will pay full attention to the robot on their card (even if you think it won't do anything the whole match). Follow the directions for that year's card that you created. When it makes sense, use tally marks. If something sticks out about the robot, write it in the additional comments space on the back. Things that might go there (I'm using 2013 as an example): good D-bot, awesome driver control, 6 runs-wow!, climb and dunk, tippy...fell over!, blocks teammates, doesn't know rules, etc.



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After the match is over, the scout with the box collects all of the cards and sorts them numerically back into the box. Then they get out the next set of cards, and you repeat the process for all of the qualification matches on Friday.

You do not need to scout any more of the qualification matches using the method described above if you don't want to on Saturday morning. Your time would be better spent looking for specific things, such as "Team so-and-so is a good cycler, but can they be used as a defensive bot?" and so on. *Note: every team with a good driver can be turned into a team with a good defensive bot.* You may also want to do more pit scouting to clean up some of your data, such as, "I know team so-and-so has a tank drive, but how many CIMs do they have?"

One last thing: in 2015, we tried adding another aspect we called "alliance scouting," where basically we had a scout for each alliance. They would write down what strategy the alliance used during that match, and how effective it seemed to be. In hindsight, this idea wasn't the greatest (especially because we used up almost 200 index cards!), and so I'm thinking of abandoning this for future years.

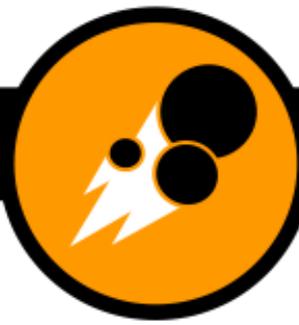
## **The Scouting Meeting**

Invite the scouting team, the drive team, and "anyone who's watched matches in an analytical way" as Mr. Kanagasabapathy says. The goal for the data you collected is to use it to make the rough draft for your pick list. **DO NOT SKIP THE SCOUTING MEETING!** (We tried it at IRI in 2013. It doesn't work!)

Entering data can be done modeled off of other competitions' internet failure spreadsheets. It will basically look like a bunch of scouting cards all strung together end to end. You will use this spreadsheet and programs from former competitions to predict the final rankings.

Note defining characteristics of each robot. I like to color code using the sticky-tabs included in the box. Things to categorize by (using 2013 as an example; these aren't necessarily in a specific order):

1. Top all-around bot
2. Top offensive disk/scorer
3. Top defensive
4. 30-point climb
5. Full-court shooter (effective)
6. floor pick-up



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Predict the outcome of alliance selection and highly-ranked teams' strategies for alliance selection. This is the fun part! Start by putting the predicted top 8 ranked teams in a row. Then predict you are team #1. Who would you pick to be on your alliance? This will depend on several factors. If team #1 picked, say, team #4, team #4 becomes a part of alliance #1 and all the other robots below 4 move up in rankings (e. g. #5 becomes #4, etc.). Next, go to team #2. Who are they going to pick? Continue in this manner until there are 8 alliances of two teams each. Now you are going to go in reverse order. Alliance #8 will pick another robot. Then Alliance #7 picks another robot, and so on until all the alliances have 3 robots total. The reason you want to go through this is to see where you think Team Neutrino will end up among the other teams, as well as gain a feel for the process of alliance selection (for any new members).

Come up with your rough draft of your ordered list of teams. Knowing what information you have based on the teams you marked earlier with the colored tabs, you can now come up with a list of 24 teams you may want to choose, plus 3-6 extras so you have a buffer. It is a good idea to split your list into categories according the traits above (or make multiple lists), and mark any that you want to pay special attention to.

## **Alliance Selections**

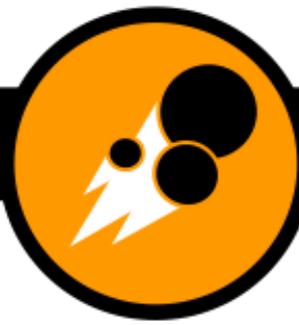
If you are chosen to go down to alliance selection, good luck!! You will do fine. Make sure you bring: safety glasses, the scouting box, a team list, your ordered list of 24 (or 32) teams, and a pencil. If you are seeded/ranked 1-8, you will go onto the field with the other highly ranked teams. If you are ranked 9 or more, you will stand in a line around the field. The announcer will explain how alliance selection works to the audience, and then seed #1 will choose their first team. If you are chosen, congratulations! A good thing to say is "Team 3928 Team Neutrino graciously accepts." Then everyone moves up and team #2 chooses. If you are alliance captain, refer to your list to choose. Make sure you are crossing teams off of your list as they become alliance captains or are selected. When alliance selection is over, if you are on an alliance, the alliance captain may want to hold a strategy meeting over lunch. Pat yourself on the back; the hard part is over!

## **Managing the scouting sub-team**

If you are chosen to be the Scouting Manager (or "lead scout"), congratulations; this is a pretty important roll! Most of the things you'll need to do are described above, but I have some more tips and tricks.

## **How to pick your scouts**

Hopefully, Team Neutrino will continue to be large enough to have a good-sized scouting team. As the Scouting Manager, you can choose who will be on the



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scouting team. You need to eliminate the drive team since they'll be really busy and have "tunnel vision" anyway, but don't count anyone else out yet. You can include mentors, but let students have priority.

You need 7-8 members on your scouting team during regional events. You'll need yourself (duh) plus five other primary scouts, and a couple backups if possible so people can take breaks. You also need someone to be in charge of the scouting box (this needs to not be you; see "Tip for Match Scouting" below) and someone to input data onto the octopus/scouting database if you want to use that.

Once I knew who the drive team, pit crew, and Chairman's presenters were, I always just emailed the entire team and asked people to apply. In hindsight, this wasn't the best way to do it... because then scouting is seen as something you do if you don't get to do anything else, and not something that you need some of your best team members, your best tacticians, working on. You might want to consider having a scouting practice day to assess how well interested members scout, a scouting test, or something like that so you can minimize bias. I'd like to keep the number of match scouts as low as possible, so you have less people knowing a lot more, as opposed to more people having less firsthand analyses about each team.

## **Make it fun!**

Scouting is treated as a punishment on some teams, believe it or not. That is no way to incentivize people to work hard and care about what they are doing. As Mr. Kanagasabapathy says in his seminar on scouting, inaccurate data is actually worse than having no data at all! So... how can you make scouting a fun experience for all involved? I started by getting mini neon-colored clipboards and fun pencils. In 2015, we thought about bringing stickers so everyone could personalize their own clipboards, but we ended up not doing that because that would've been too many clipboards to carry; maybe that idea will work out in the future? Mr. Kanagasabapathy suggests creating some sort of gambling game to incentivize scouts to really pay attention to which teams are good and what they're good at (Watch the full seminar for a great description of "SimBucks!"). Remember to keep the atmosphere fun, and don't force anyone to be on the scouting sub-team that doesn't want to be.

## **Tip for match scouting**

When you're match scouting, you (lead scout) should be sitting right next to the scout with the box. I suggest actually having a parent holding the box and sorting cards, because this person won't have time to actually watch matches and get any first-hand data or make first-hand analyses. This person should hand the cards to you for the upcoming match, and you should have first pick for either a robot you



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haven't scouted before or a robot that isn't especially good or not-so-good. Your goal is to be able to summarize what each robot does at the end of Friday's matches (a daunting task, I know!), and the middle-ranked robots are the ones you want to know the most about. It's easy to know who the top five ranked robots are, and who the teams are that really don't do much, but the real challenge comes in when you're trying to order, say, teams that are ranked 10-30. This will pay back later during the second round of alliance selections.

That being said, you do want to know what the top ranked teams do and are good at, but there comes a point where you don't gain any information from watching them again (a great example of this would be WAVE Robotics in 2015).

After you've picked your card, share the stack with the next best scout (or best analyst, etc.) so he/she can also develop that list of summaries. Then, pass out the rest of the cards. See below for a suggested "seating chart."

3456B  
21XCB

1=Scouting Co-Manager  
2=Scouting Co-Manager  
3436=rest of scouts  
X=Scouting box  
C=Scouting database, if applicable  
B=Backup scouts

## **Research other teams' methods**

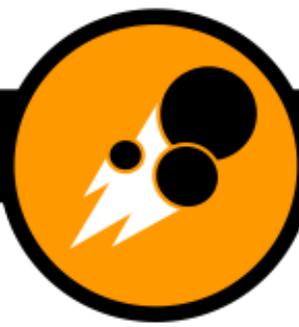
Although Team Neutrino's method is pretty good (if I do say so myself), there are some even better methods out there! Asking other FRC teams how they scout might just give you some ideas on how to improve our methods.

## **Get involved with team strategy**

One of my biggest regrets is not being more involved with creating and helping to implement our match strategies. Because you'll end up knowing the most about all the teams at any competition you attend, it's important that you can see how any other team could potentially fit into our strategies. In order to be able to do that, you need to be thoroughly involved with creating 3928's strategies from kickoff, or at least know them really well after they're all developed.

## **Never skip the scouting meeting!**

Just don't do it. It can make you really uneasy the next day, especially if your ranking starts to go up!



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## **Graphics**

A consistent and recognizable team image is essential to the team's success. I got involved with Team Neutrino's graphics team my freshman year after I realized that I could apply my graphic design skills to robotics. Note: most skills can find a place on an FRC/FTC team... ;)

The graphics sub-team is in charge of maintaining our team's image and making sure everything looks awesome. This includes updating our brochure, business card, robot card, etc. and creating newsletters, annual reports, posters, banners, etc. The graphics sub-team is also in charge of giving our sponsors appropriate recognition.

## **Identity Standards Document**

The Identity Standards Document (ISD) is a record of appropriate colors and fonts to use on all team documents. The Graphics Manager will need to use this as a reference when approving documents for printing and publishing. If the ISD is updated for any reason, you need to update the "updated: mm/dd/yy" which is a part of the footer. Save the ISD as a new file and name it "Identity Standards Team Neutrino\_Updated-mm-dd-yy." Finally, switch out the former ISD on the website with the one you just created.

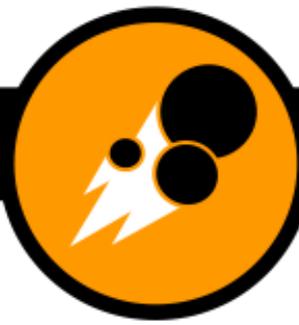
## **Apparel**

Each year, team apparel needs to be updated and ordered. Historically, we've designed and ordered t-shirts and sweatshirts from Sigler annually.

### **Team Neutrino apparel design process**

I'd like the front of the 2015 t-shirt to be used as the front design from now on, but the back needs to get updated with our new sponsors. Ideally, we'll know who our sponsors, team members and mentors will be at kickoff each year, and then the graphics manager can have the design done by the end of kickoff weekend and can place the order at the end of week 1.

Start by creating copies of the previous year's designs and putting them into the appropriate folder in the new season's folder on the hard drive. The t-shirt designs are Illustrator files. Open your new version of the back and delete any sponsor logos for companies that are not sponsoring the team this year with at least a silver sponsorship (\$500). Next, locate the logos for companies that are newly sponsoring Team Neutrino at at least a silver level. Then you need to "play Tetris" with the logos and make them all fit underneath the header. Make the logos for companies



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that donated a larger amount of money bigger and higher up. Since Iowa State University's logo is long and flat, it looks good as a pseudo-footer at the bottom of the shirt. Make a copy of the back you just designed and replace "3928" with "MENTOR." This way, the relative placement and size of the logos will stay the same. Finally, have the Graphics Manager and Co-Captain approve the designs and submit them to Sigler as PDFs with your order.

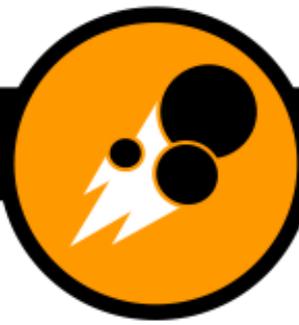
## Ordering apparel

With the designs done by Sunday night right after kickoff, you can have the order form included in the first weekly team email of the season. To create the order form, create a copy of the previous year's order spreadsheet and put it in the appropriate folder in the new season's folder on google drive. Delete all the names and orders from the previous year, and put your order in the first line as an example. Get the sharable link and send it to the co-captain along with the designs to put in the weekly email. Make sure it's set so that if you have the link, you can edit the sheet.

Historically, we've designed and ordered these products. All products have a completely black base. All members are required to buy an official t-shirt. Mentors should receive one official t-shirt (mentor version) for free.

- Official T-Shirt (Members): has the official front design that stays the same from year to year and the back that has 3928 in the header.
- Official T-Shirt (Mentors): has the official front design that stays the same from year to year and the back that has MENTOR in the header.
- Non-Official T-Shirt: has the official front design that stays the same from year to year and a blank back.
- Hoodie Sweatshirt: has the official front design that stays the same from year to year printed on a black hoodie.
- Youth Hoodie Sweatshirt: has a mini version of the front design that stays the same from year to year printed on a youth size black hoodie.

We have an account at Sigler. This account has our front design from 2015 already in a standard and mini size. They also are familiar with the colors and base products we like, but it's still a good idea to bring in a shirt from a previous year so you can make sure the orange color matches.



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## Other team and program apparel

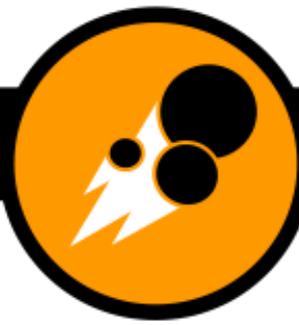
In 2015, we started Jr. FLL teams at Edwards Elementary school that were collectively known as "Club Proton." I designed t-shirts for Club Proton that were based off of Team Neutrino's t-shirt design. When more teams are created (such as Quark), they should also follow those designs.

## Newsletter

I started the newsletter during the 2014 season as a way to keep parents, sponsors, alumni, friends of the team, and team members updated on how Team Neutrino was doing. The newsletter is a professional and impressive way to achieve this kind of update.

To start a new *volume*, begin by creating a new folder on the team's external hard drive called "Volume YYYY - Game Name." Open the last newsletter from the previous year and save it as a new document named "Volume YYYY - Issue 1." Now that you are working off of a new PowerPoint document (please confirm now!), go up to View>Slide Master. On the left, click on the slide called "Team Neutrino Slide Master: used by slide(s) 1." You are now able to edit elements of the slide background. Wherever the string of sponsor logos is, update it to include color versions of the logos for FIRST, 4-H, Iowa State University College of Engineering, and the Diamond and Platinum sponsors for the new season. Once you have all the logos generally in the right spot, select them all and click on Home> Arrange> Align> Align Centers. Keeping them selected, click on Home> Arrange> Align> Distribute Vertically. Update the year to the current year. Save the document.

Issues are created for each week of the build season, each official competition, and each month of the off-season. To start a new *issue*, begin by opening your last newsletter and save it as a new document named "Volume YYYY - Issue #." After confirming that you are, in fact, working off of the new issue that you just created, delete all the pictures left over from the last issue and change the title (this is the thing that should be in white Impact font). Next, get a piece of scratch paper and make a list of significant things that happened on the team that week (build season), competition, or month (off-season). Make sure you include all outreach events so that the newsletters remain a quick record keeping tool. Write down short summaries for each topic you want to include and download good pictures from our Flickr page to go with each topic. Once you have all the pre-writing stuff done, you can get back to the actual newsletter. Update the text boxes to the new content for this week/competition/month. Insert the pictures you just downloaded from Flickr. Select them all, size them down, and click on Picture Tools> Format> Rounded Diagonal Corner, White." Change the picture border color to our Dark Grey color. Save the document and submit it to the graphics manager for approval. Once the newsletter is approved, email it to the Co-Captain to include in the weekly email,



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the fundraising manager to forward on to the sponsors, alumni, and friends of the team, and the social media manager to post on our website.

## **Brochure**

Our brochure is example of what I call a "living document." It's updated frequently (annually at the very least) and more copies are printed as needed. (Other examples of living documents include our sponsor letter and business plan.) The brochure is a Microsoft Publisher document. To update it, start by creating a copy of the most recent document and renaming it "neutrino brochure-trifold YYYY-mm-dd." Open the new version of the brochure you just made and get started!

I've listed the elements of the brochure that get updated here. When you update, make sure things that are aligned in any way (such as the text box in the middle of page 2 and the team picture directly below it, which are vertically centered) stay aligned in that way.

- On page 1, the only thing that needs to be updated is the year and the team picture. This can be updated with each new team picture (kickoff, robot reveal, competitions, etc.). If we take a new team picture and there is already one on the brochure for the current year, I'd update it only if the new team picture is has more people, better resolution/lighting, or some other valid reason. Don't update it just because it's the latest team picture.
- On page 2, the pictures need to be updated. Try to keep the main idea of the picture the same and just change the content. For example, the top left picture is of the robot competing. When you replace this picture, make sure the new picture is of the newest robot competing.
- On the left side of page 2, the text box about what the robot was designed to do needs to match the robot in the pictures on that version of the brochure.
- Whenever you update the brochure, do a quick skim of the other text boxes and make sure they are correct grammatically and content-wise.

## **Buttons and Stickers**

Buttons are a staple among FRC team handouts at competitions. We first had them during the Ultimate Ascent season, and slight variations were made to the design in 2014 and 2015. Since our logo is a circle, it makes it a little odd to fit onto a button and make it look good. I think it is okay to violate the ISD a little so that the team nickname and number are easily visible. We got a button maker donated in the summer of 2015, but I still prefer ordering Team Neutrino buttons from 24hourwristbands.com because they have a great price and you don't have to go



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through the work to make all those buttons. I think it's best to order 1000 buttons a year and get 1.5" or 1.25" diameter size.

Stickers can be cheaper than buttons, especially if you can get them donated from a local business. My dad donated three thick stacks of blank white stickers to the team in late 2013, and that lasted for three seasons. The design for stickers and buttons can be the same since they are both round. Depending on how creative the graphics sub-team is, button and sticker design is where they can have a little fun if they want!

For other programs that Team Neutrino starts and mentors, such as Club Proton, the buttons and/or stickers should be round and display their logo and level of FIRST program prominently. The Club Proton sticker designs from 2015 can be found on the team external hard drive under 09-Jr. FIRST LEGO League> Club Proton.

## **Robot Card**

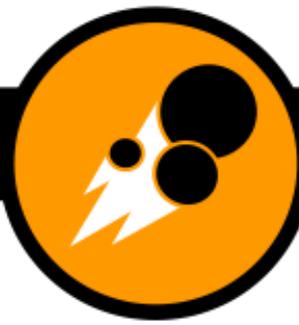
We had a robot card for our Ultimate Ascent and Aerial Assist seasons. Creating a robot card is a good idea if the design and functionality of the robot, as well as the team's main strategy, is consistent. You can usually get great deals from Vistaprint if you have an account, like 50 4x5" cards for \$5 (that's usually enough for one competition)! If you do choose to create a robot card for this season, start by creating a copy of the most recent robot card. I really liked the one that I designed for Champs in 2014, if you want to start there. Update or delete the competition name and replace the picture of the robot with a really nice one for this year. Digital renderings are nice, but I prefer one of the actual robot on the field, which will make it more recognizable for other FRC scouts.

In 2015, we had a robot spec sheet instead of a robot card since the robot changed its capabilities about once every day, and it just wasn't going to be practical to order a bunch of robot cards and then have them turn out to be inaccurate. We printed out a copy to display in our pit and another for the pit binder. This way, we only had to replace two paper sheets if we needed to update it.

## **Sponsor recognition**

We show our gratitude for our sponsors' support by displaying their logos on our robot, website, team documents, posters, and banners. Here's a guide to which logos should be displayed where:

Diamond (\$5000+) – Large logo on robot, banner, pit, t-shirt; mention on team displays and website  
Platinum (\$2500+) – Small logo on robot, banner, pit, t-shirt; mention on team displays and website  
Gold (\$1000+) – Logo on banner, pit, and t-shirt; mention on team displays and website  
Silver (\$500+) – Logo in pit and t-shirt; mention on team displays and website  
Bronze (\$250+) – Mention on team displays and website



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Honorable Mentions (\$50+) – Mention on team website

I've already described how to give sponsors appropriate recognition on our t-shirt, but I'll go through the rest here.

## Robot

As soon as the technical side of the team knows where they're putting poly-carb and what shape it will be, have them tell you. Create a new document on Adobe Photoshop with those dimensions, name it "YYYYsponsor robot stickers composite," and open all the color logos for the Diamond and Platinum sponsors. Go to the first logo you opened, and right click on the layer with the logo. Duplicate the layer into the robot logo document you just created. Do this for all the other logos and close those files as you finish duplicating the layers onto your document. Now, "play Tetris" with the logos and fit them all onto the poly-carb, making sure that the Diamond sponsor logos are bigger than the Platinum ones. When you have the robot sponsor logo display done, save it again. Next, create a new document called "YYYYsponsor robot stickers p1" with dimensions 8.5x11." Duplicate logos from the composite document over to page 1, but don't resize them. This way, they will actually keep their same actual size. When you fill up page 1, create another document called "YYYYsponsor robot stickers p2" and do the same. Create new pages until you are out of sponsor logos. It's a good idea to try to put black and white logos together and color logos together to save on printing costs.

When all of the pages are done, have them printed at a copy shop on sticker paper (8.5x11" paper that is actually a big sticker!). Cut them out nicely and give them to the mechanical sub-team to put on the robot.

## Banner

The sponsor banner is attached below the big Neutrino banner at competitions. In 2014, we transitioned from having a new sponsor banner printed every year to having a felt-covered base that we can Velcro new sponsor logos to annually. When you know who your sponsors are for the upcoming season, create a copy of the previous year's sponsor *banner* layout document and call it "YYYYsponsor banner logos composite."

Start by deleting any logos of companies that decided not to sponsor us for the current season and inserting logos for companies that are new. Remember which logos were for sponsors from last year (if you forget, you can always check our website under seasons> sponsors) and try not to change their size; you don't want to print anything more than you have to. "Play Tetris" with the logos and make them all fit. Then, make a new document called "YYYYsponsor banner logos p1"



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with 8.5x11 dimensions and duplicate the layers with the new logos onto it. You might not be able to fit all the new logos onto one page, and in that case, create another document called "YYYYsponsor banner logos p2."

Print the new documents out at a copy shop onto cardstock, cut them out into rectangles, have them sheet laminated, cut them out again (leaving about an 1/4" margin of lamination), and put some sticky Velcro on the back. Before you leave for your next competition, confirm that you have all the logos that you need for the banner in a folder with a picture or sketch of the composite layout. At the competition, it's super easy to set up the banner!

## **Pit**

When we say that a sponsor's logo will be displayed in our pit, we really just mean that their logo will be displayed in color on our sponsor poster stand-alone that we keep in the pit at competitions and display frequently at outreach events. In 2014, we transitioned from printing a new poster every year to having a Velcro version like the sponsor banner. When you know who your sponsors are for the upcoming season, create a copy of the previous year's sponsor *poster* layout document and call it "YYYYsponsor poster logos composite." From here, follow the instructions for the sponsor banner.

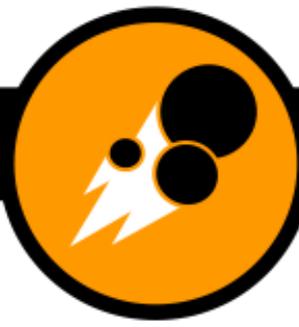
## **Team displays and website**

When we say that a sponsor's logo will be displayed on team displays and the website, we mean that it will be displayed on team publications (when they fit), the sponsor page <http://www.teamneutrino.org/sponsors/> and the year-specific sponsor page that is located in the season page. When you are displaying sponsors on team publications, such as the PowerPoint theme and Robot Reveal invitation, include their names or logos in order of donation amount. For instance, include all of the diamond sponsors before you include the platinum sponsors, and so on.

## **Pit Binder**

Each year, we create a new pit binder to use at outreach events and when talking to judges at competitions. Included in the pit binder are the following documents. This is the order they came in for 2015.

- FIRST description (same year-to-year)
- Description of game (copy and paste select paragraphs and diagrams from the game manual)
- Team history (added to each year)

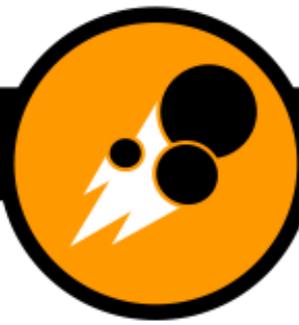


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- Build Season
  - o Build season collages
  - o Programs from each competition for that year
  - o Newspaper articles
- Off-Season
  - o Off-season and pre-season collages
- Marketing
  - o Marketing materials with descriptions
  - o Identity Standards document
- Newsletters (current volume)
- Other
  - o Team Handbook
  - o Chairman's Essay
  - o Chairman's Executive Summary
  - o Business Plan
  - o Woodie Flowers essay
  - o Dean's List essay
  - o Safety Handbook
  - o Event comment sheets since June 1 of preceding year
  - o Tabulated outreach
  - o Layout of sponsor logos for pit poster

The build season and off-season collages will need to be created each year. The graphics sub-team will creatively develop new collages using pictures from the



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current build season and off-season. The marketing materials section can be copied and pasted and pictures replaced with new PNG versions of each file.

Title pages for each section should be modeled off of the ones from 2015, meaning that the same formatting should be used. Any team documents, such as the Chairman's essay and Business plan, should be printed on the team letterhead, which can be found on the team hard drive under 02-Graphics> Templates. (For those documents specifically, it's actually easier to go file> save as on the previous year's document and then just replace text.)

## **Annual Report**

The annual reports are Adobe InDesign files, and it would be easiest if they stayed in that format. Adobe InDesign can be downloaded for free onto an Ames High laptop at the Media Center. Annual reports are created once each year, and they cover September 1<sup>st</sup> of the corresponding school year until August 31<sup>st</sup> of the next. For example, the 2013-2014 annual report was created in the fall of 2014, and covered September 1<sup>st</sup>, 2013 – August 31<sup>st</sup>, 2014.

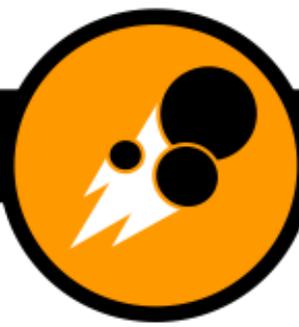
To create a new annual report, start by creating a copy of the previous year's annual report and naming it "Team Neutrino Annual Report YYYY." The year should be the year of the competitions it covers.

Start by replacing the year on the cover to the current year. Next, find a high resolution action shot of the whole drive team and the robot (talk to the team photographer and make sure this gets taken) and use it to replace the one from the previous year. Next, copy and paste the text of the Chairman's essay into the text of the Chairman's essay from the previous year. The word count for the 2015 essay was almost at maximum, so you shouldn't need to add or subtract any more pages. Titles of sections should be all caps instead of bold or underlined.

## **By the Numbers**

Next, you'll need to create a copy of the previous year's By the Numbers Infographic, which is a Photoshop file. Start by adding to the award history, but keep the same formatting. Next, update the number of outreach events and outreach hours, which can be found on our tabulated outreach document. You want the number for Sept-Aug for the years you are doing the report for.

Next, add to the list of Iowa FRC teams. Make the color of the team name, number, and city their primary team color. To find teams' primary colors, go to their website and use the eyedropper tool over what you think is probably their primary color. If you can't tell, email them. If for some reason you absolutely can't figure it out, use our official dark grey.



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Next, update the map of Iowa FRC teams, which is also a Photoshop file. Start by creating a copy of the previous year's map and naming it "iowa frc yyyy." Next, Change the opacity of the grey map of Iowa to 30% and making the colorful Iowa map visible. Make a copy of one of the pins by holding down the alt key while dragging it to the hometown of a new FRC team. Repeat this process for the other new FRC teams that competed in this season. Change the color of the pin by going to image> adjustments> hue/saturation and using the slider bar. I typically will pull in a screenshot of their website so I can get as close as possible to their actual color. Don't forget to hide the colorful Iowa map again when you're done!

Add to the Award History by following the same formatting as previous years. Reference our Blue Alliance page if you're unsure what the official name of an award we won is.

Update the Team Neutrino membership by going to our Piktochart account and adding the new team size there. Take a screenshot of the graph and insert it into the By the Numbers Photoshop file. The x and y axis have text layers in the Photoshop file that cover up the ones from the snip since they are in the correct font (Verdana, 6 pt). You will need to update these by at least adding a new year.

The Alumni Stat pie charts are also on our Piktochart account. Similar to Team Membership, take a screenshot of the graphs, insert them into the By the Numbers, and edit the text layers to match the current year's information.

## **Events and Programs, Team Roster, and Sponsors**

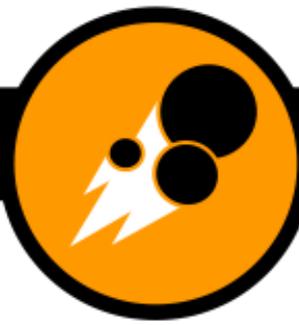
The Events and Programs should cover September to August. Reference the preseason, build season, and offseason planning documents to make sure that you are including everything. Put an asterisk after outreach and volunteering events.

Relink the team photo to the official one from the current year. Update the team leadership, members, and mentors. Update the sponsors to fit the current year.

Finally, have the annual report approved by the Graphics Manager and the Co-Captain, save it as a PDF, and upload it to the website. Get five copies printed double-sided on cardstock with a comb binding and clear front and back covers at Copy Works. Give one to the Co-Captain to keep on file, one to the Chairman's group for the Chairman's presentation, and the other three to the PR Manager to keep in the pit at competitions.

## **Managing the Graphics Sub-Team**

The Graphics Manager needs to have an eye for design and be fluent (or become fluent) in several programs such as Microsoft PowerPoint and Adobe Photoshop. Just like every other manager position, this person also needs to be organized and



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able to meet deadlines. Everything you're required to make sure gets done is described above, but here are some more tips.

## **How to select members for your sub-team**

I think our team is at a point where you don't really need to create anything truly original on the graphics team if you don't want to. This means that pretty much anyone can work on things for the graphics team, but they should make sure to get things approved by the Graphics Manager and Co-Captain before anything is published and/or printed.

## **Tip for everyone working on the graphics sub-team**

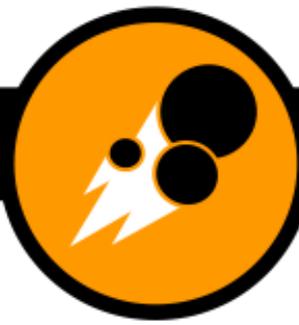
Everyone who works on anything for the graphics sub-team should make sure to have a new-ish version of Microsoft Word, Microsoft PowerPoint, and Microsoft Excel on their laptops. Install the templates from Team Neutrino's external hard drive. They can be found under 02-Graphics>Templates. At least the Graphics Manager should also have Microsoft Publisher, Adobe Photoshop, and Adobe Illustrator. Adobe programs can be downloaded for free by an Ames High student onto an Ames High laptop. (This leads to fun times when you have PowerPoint open on your personal laptop and Photoshop open on your school laptop at the same time...! 🤪 ) The Graphics Manager needs to be fluent in all the programs mentioned above, and hopefully taken at least one graphic design class.

## **You gotta be a little OCD**

When you're working on any graphics for Team Neutrino, you need to want them to look perfect. Colors and fonts need to always follow our identity standards, elements of a document need to be lined up, resolution needs to be as high as possible (keep snipping to a minimum; linking is better) and grammar and spelling mistakes need to be eliminated. Don't settle for "It looks close enough." Triple check each document for mistakes, and have everything approved by the Graphics Manager and the Co-Captain. All of this is especially true for the annual report, which is created purely for the sake of aesthetics, since all of the information can be found somewhere else.

## **Color is better**

If you're deciding whether or not you should print in color (since it is more expensive), think about what the document is for. Most of the time, you should print in color because your designs will pop out more. You should also think about the type of paper you are printing on.



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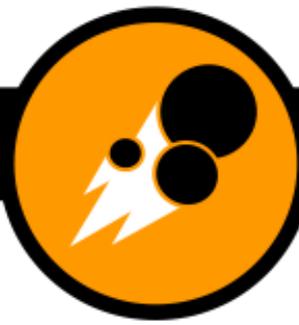
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## **Print at Copy Works**

ISU students get a 20% off discount and alumni get a 25% off discount. Use your resources! :D

## **Know where to copy from!**

One of the most important tricks is that you can save a lot of time (and create a more uniform look) if you copy and paste text and formatting from previous elements either within the same document or others. For instance, when Kelsey Draus and I created the pamphlet in 2013, we copied and pasted the information for the "What is *FIRST*?" flap from [www.usfirst.org](http://www.usfirst.org). When you're creating a new document, chances are that what you want for text can be found somewhere else. This also applies for formatting. I LOVE the "Format Painter" tool! The shortcut key in Microsoft Word is ctrl+shift+c. To use it, first select a section of text with the desired formatting. Next, press the shortcut key and then select the text you want to change.



# Team Neutrino

**FIRST Robotics Team #3928**

## **Award Submissions**

There are several awards in FRC. For the 2015-2016 season, I appointed managers for different non-technical areas. The awards category is split between a few different managers. The Chairman's award submission is directly overseen by the co-captain. The Woodie Flowers essay submission can be delegated off to another team member to oversee, but there does not need to be a specific manager for that role. The Dean's List essay (not described below) is written by the mentors for up to two members on the team in grades 9-11. The Entrepreneurship Award submission is overseen by the fundraising manager. Finally, the Media & Technology Innovation Award submission (not described below) is created by the social media manager.

Make sure to read about each of these awards in the Administrative Manual.

## **Chairman's**

The Chairman's Submission is the most important thing that the Co-Captain oversees. There are five sections to the submission: A 10,000 character essay, 12 500 character short essays (executive summary), a six minute presentation and six minute question and answer period, a three minute video, and four 4x5" picture collages. Simbotics also has a phenomenal seminar on the Chairman's submission, which I highly recommend. [https://www.youtube.com/watch?v=G\\_aixQwINcw](https://www.youtube.com/watch?v=G_aixQwINcw) Similar to scouting, I will describe Team Neutrino's process in creating our Chairman's submission whereas Karthik Kanagasabapathy describes the submission process in a more general way. I'm not going to write a whole lot because all of our brainstorming, outline documents, all drafts, and all final versions are saved on our Google Drive.

## **Essay**

10,000 characters seems like a lot, but it really isn't. Every year, our rough draft always hits a higher and higher character count (the one exception being 2014; I still can't believe our essay ended up being a mere xx characters!). We start the essay writing process by selecting a theme, being careful not to use one that we've already used or blatantly copy from another team.

From there, we typically write an outline and then flesh it out. Once we are into our second or third draft, we send the link to the Google Doc out to the team with commenting rights so they can give us feedback. Our fourth or fifth version gets sent to friends, teachers, parents, alumni, friends of the team, and anyone else we can think of who would give some helpful comments. It's a really good idea to send



# Team Neutrino

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one of the earlier versions (first or second draft) to a strong journalist contact since they are good at selling stories.

Once again, that character count is hard to hit, but don't fall into the temptation of using ampersands (&) instead of the word "and" or numerals instead of spelling out numbers less than ten.

## **Executive Summary**

The Executive Summary is a great place to highlight numbers and statistics that you have for your team, such as the high school graduation rate, number of FIRST teams you've started, assisted, and/or mentored and number of events you've run, hosted, and/or volunteered for.

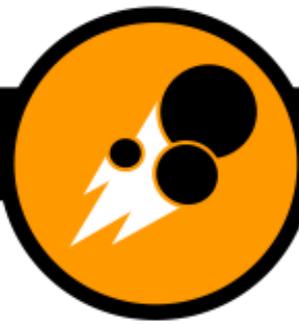
## **Presentation**

You get three presenters during the Chairman's presentation. Since you are physically talking to judges, we like to use this time to incorporate a few anecdotes and stories about how FIRST has impacted us. We've typically split the presentation into three sections and had each presenter cover a section. In 2016, Rucha talked about team structure and sponsor relations, Tianxin talked about recruitment and outreach events, and I talked about starting, mentoring, and assisting teams, team sustainability, and the future plans of the seniors.

Use the Question and Answer section to your advantage by incorporating more content. "Play tennis" with the judges and lead them into the next question.

## **Video**

The video is a great place to highlight emotion. We used it in 2016 to emphasize the strong relationships between our members, mentors, parents, sponsors/partners, and community. It's three minutes long, and a lot of work to put together, so start early!! Historically, we've outlined the video, written interview questions, had students and community members sign up for times to interview, recorded interviews, and then created the video with Adobe Premier. In 2016, we bought this epic microphone called a Yeti. It was expensive, but is such high quality! Even though the video is not emphasized when the Chairman's judges are evaluating submissions, it's still important to make it look and sound as professional as possible since this is probably the only exposure a lot of teams will have of you. It can also be a great thing to show to sponsors and people interested in joining your team.



# Team Neutrino

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## **Pictures**

You get four 4x5" images in your submission. We've treated them as more of themed collages instead of single pictures so we can cover more things. In 2016, the collages were:

1. Inspiring FLL (mentoring pictures, FLL kit building, FLL scrimmage, and regional and state championship volunteering)
2. 2016 Outreach (pictures of some of our high-impact outreach events from the past year)
3. Spirit (fun candid)
4. Team Neutrino (team photo and more fun candid)

## **Woodie Flowers**

The Woodie Flowers Finalist Award is "presented to an outstanding Mentor in the robotics competition who best leads, inspires, teaches, and empowers their team using excellent communication skills" (Administrative Manual). Historically, I scheduled a members-only meeting at the beginning of week 3 to start the essay. This is what was included in the weekly team email at the beginning of week 2:

**Student member only meeting.** The student members will be meeting on Wednesday the 12th from 6-6:30 to discuss the Woodie Flowers Award submission. Please try to be here; the ideas that go into this essay should be representative of all student members.

At the meeting, I explained the basic idea of the Woodie Flowers submission. Next, each member go two votes for the mentors they thought best deserved the award. Then we talked briefly about each of the nominations. After this, we each voted again, but only once. After we had reached a decision on a single mentor, we erased all and answered the following questions about the nominated mentor:

- How does ~ explain STEM concepts?
- How does ~ demonstrate his/her enthusiasm for Science & Engineering?
- How does ~ encourage you to work as a team on projects?
- How does ~ inspire you to use problem-solving skills?
- How does ~ motivate you to do better?



# Team Neutrino

**FIRST Robotics Team #3928**

- How does ~ inspire the team?
- Other Comments that should be included in the submission?
- Who would like to help write this submission? *We wanted 3-4 writers.*

After this meeting, a few members were put in charge of writing the 3,000 character essay and choosing the six pictures. When the group got to a point where they all thought it was good, they should sent it to the rest of the members to comment on. You should use the [members@teamneutrino.org](mailto:members@teamneutrino.org) email for this.

## **Entrepreneurship Award**

The Entrepreneurship Award submission consists of an executive summary, a business plan, and four pictures.

### **Executive Summary**

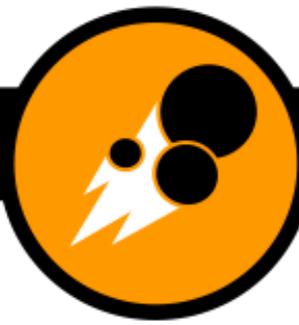
The executive summary should follow *FIRST's* guidelines outlined in the Administrative Manual:

**TEAM MISSION STATEMENT:** Please briefly indicate what you believe to be the "driving engine" of your team. Your mission should be clear and concise. It should represent to any reader exactly what your business plan strives to accomplish. (1600 characters allowed, including spaces and punctuation)

**TEAM ORIGIN:** Please provide the date that your team formed, the location of your team, the current number of team members (highlighting any growth over past years) and describe the challenges the team had to overcome in order to participate in FIRST events. (1600 characters allowed, including spaces and punctuation)

**ORGANIZATIONAL STRUCTURE:** Please detail how the team is structured to 1) Raise funds; 2) Ensure funds are properly spent; 3) Find and engage sponsors; 4) Recruit team members/mentors for current & future seasons; 5) Ensure FIRST principles remain core to the team's efforts. Uploading an image of your team organizational chart below, will also satisfy this requirement. (1600 characters allowed, including spaces and punctuation. Graphic image allowed in addition to or as an alternative to text - upload 5" x 4" 100 dpi resolution images that end in .JPG or .GIF)

**RELATIONSHIPS:** Please detail team efforts to specifically engage, inspire, educate and retain 1) Team members; 2) Mentors; 3) Sponsors/Community. (1600 characters allowed, including spaces and punctuation)



# Team Neutrino

**FIRST Robotics Team #3928**

**DEPLOYMENT OF RESOURCES:** Please detail how the resources of your team (Financial or otherwise) have been deployed to 1) Engage the community to spread the message of FIRST; 2) Inspire others to get involved so that FIRST continues to grow; 3) Ensure all team members get the most out of their FIRST experience. (1600 characters allowed, including spaces and punctuation)

**FUTURE PLANS:** Please indicate specific plans the team has for the next 3 years in regards to sponsorship, team and community outreach (including helping FIRST grow) and detail how you expect to be able to accomplish these goals. (1600 characters allowed, including spaces and punctuation)

**FINANCIAL STATEMENT:** Please include information on team finances (include financial statement detailing income and expenditures). Uploading an image of your team financial plan below, will also satisfy this requirement. (1600 characters allowed, including spaces and punctuation. Graphic image allowed in addition to or as an alternative to text – upload 5" x 4" 100 dpi resolution images that end in .JPG or .GIF)

**RISK ANALYSIS:** Please describe the team's risk mitigation plan. Present a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis or narrative that describes the team plan to identify and respond to sustainability threats. (1600 characters allowed, including spaces and punctuation)

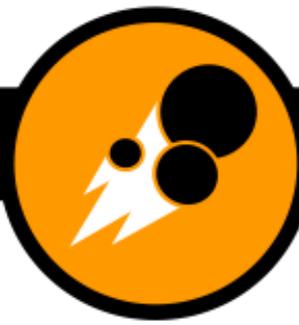
**PICTURES:** Please upload four 5" x 4" 100 dpi resolution images that end in .JPG or .GIF

Team Captain/Student representative that has double-checked this submission.

First Name/Last Name

Entrepreneurship Award submissions are posted on a private, password-protected site where only the judges and authorized FIRST staff can read the entries. By making a submission the Submitter irrevocably grants to FIRST and FIRST designees the right to use any or all of the submission in any and all media for the purpose of describing the submission, describing the Award, and/or otherwise promoting FIRST and FIRST programs.

The executive summary is just that, a summary. Highlight main ideas and important points. Your detailed business plan will follow the executive summary, and that is where you should describe everything more fully.



# Team Neutrino

FIRST Robotics Team #3928

## Business Plan

The business plan is another example of a living document. Basically, you are expanding on the executive summary. To create the business plan for a new season, start by creating a copy of the previous year's business plan and renaming it "Neutrino Business plan yyyy" and putting it in a new folder on the team hard drive under 03-Awards called "yyyy Business Plan." Start by making sure that the sections in our business plan cover everything they are supposed to. Once you have all the correct sections, go through each section and update it with new material for the new season.

The Team Outreach section does not include every outreach event, just the high-impact and/or unique ones. The Team Budget is a simplified version of the actual budget which can be found on our Google Drive. Don't forget to update the number of Iowa FRC teams on the very last page! ;)

## Judges' Information

Team Neutrino creates several documents to supply to judges at our competitions. We primarily submit the Judges' Report, which all competing FRC teams are required to submit, but we also create a judges' packet to have in the pit.

## Judges' Report

The judges' report has seven sections that each require a 250 character essay. I inserted our judges' report from 2015 below.

- 1. Briefly describe team history.** Started in 2011 by students at Ames High School and 4 FRC alumni, 3928 won Highest Rookie Seed in 2012. The team formed a new partnership with ISU & 4-H in 2013 and qualified for the World Championships in 2014 after winning Engineering Inspiration.
- 2. Team's effort in promoting STEM education.** The team is dedicated to ensuring student success in STEM. They develop and teach a summer camp where K-8 students get hands-on STEM experience. It's continued to grow since 2012. 3928 presented at a STEAM summer school for underserved youth.
- 3. Team's strengths.** Team 3928 strives to have an equal balance within all of FRC. Strengths include strong and sustaining partnerships, especially with ISU, a competitive robot each year, community outreach, and professional mentors that work with students.
- 4. Team's effort in promoting FIRST.** 3928 has made FIRST available to all K-12 students in Ames through creation and mentoring of 3 Jr. FLL teams



# Team Neutrino

**FIRST Robotics Team #3928**

and 5 FLL teams. We saw the benefits of FIRST for all ages, completed a progression of programs, and continue to spark interest in FIRST.

- 5. Robot and game strategy.** The robot will primarily get totes from the human player and pick totes off the ground. It has a multipurpose fork to grab totes and fallen recycling containers. The sleek design used both a water jet and laser cutter to ensure strength and robust design.
- 6. Team's community involvement.** 3928 has 1200+ volunteer hours and made FIRST visible to 140000+ people this year through community demonstrations, events, and programs. They also sell FIRST light bulbs at the City of Ames' annual eco fair, fitting with this year's theme!
- 7. Most significant challenge overcome.** In 2013, losing the partnership with Ames High was a major setback, but 3928 created a new one with Iowa State. This year, the team experienced unprecedented growth and reorganized team structure to ensure development of student's full potential.

As you can see, 250 characters is not a lot at all, and so you have to conserve characters. We tried to use 3928 instead of Team Neutrino, numerals instead of spelling out numbers, and concise sentence structures. These summaries should stand alone; i.e. they shouldn't require someone to read our Chairman's award or Business Plan in order to make sense, although Chairman's judges do look at the judges report.

## **Judges' Packet**

The judges' packet isn't so much a packet as it is a set of materials you want to make sure you have in the pit at all official FIRST competitions. In 2015, we tried to have these materials available to judges. This list is organized by award since judges will usually talk to the pit reps about topics related to a specific award. Put materials on display or in the pit binder.

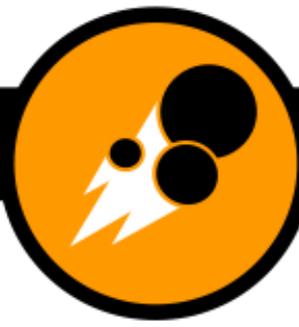
### **Creativity Award *sponsored by Xerox***

Celebrates creativity in design, use of component, or strategy of play.

- strategy sheet
- robot card (with coolest thing about our robot and why)
- CADD drawings (of both specific components and of the robot in general)

### **Engineering Inspiration Award**

Celebrates outstanding success in advancing respect and appreciation for engineering within a team's school and community.



# Team Neutrino

**FIRST Robotics Team #3928**

- annual report
- business plan
- tabulated outreach
- outreach statistics display
- information on Club Proton (Jr. FLL)

## Common Questions

- How is your team structured?
- What do your mentors do on the team?
- Tell me about your FIRST in your schools.
- Tell me about your plans to expand FIRST.
- How did you decide on your team image?
- Questions about team specific outreach activities & community involvement.
- According to you, what is FIRST's mission?
- What does Gracious Professionalism mean to you?
- How have you improved from last year?
- How do you work with sponsors? How do you connect with them and work with them to further your relationship with them?
- Tell me about your efforts to expand FRC.

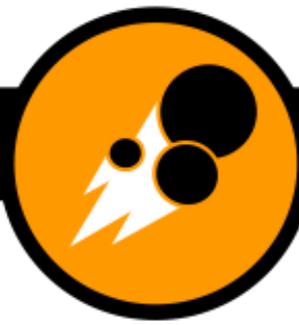
## **Excellence in Engineering Award *sponsored by Delphi***

Celebrates an elegant and advantageous machine feature.

- robot card
- CADD models
- robot specs display
- spare parts of robot (show them the part; give them a picture/flyer)
- mini 3D model of robot

## Common Questions

- Tell me about your robot.
- What was your design process?
- How long did it take you to design the robot?
- How do the mechanisms work?
- What challenges did you overcome?
- What factors limited your design?
- What was your major design motivation?



# Team Neutrino

**FIRST Robotics Team #3928**

- What makes your drive train/lift/other systems innovative?
- How did you design your robot?
- What makes your robot different than everyone else's?

## **Gracious Professionalism® Award sponsored by Johnson & Johnson**

Celebrates the team that exemplifies the core values of *FIRST* in their relationships with other teams and by their demonstrated Gracious Professionalism®

- tabulated outreach
- do good things at competition

### Common Questions

- What have you learned from FIRST?
- What will you carry from FIRST?
- What does FIRST mean to you?
- Tell me more about your FIRST outreach.
- According to you, what is FIRST's mission?
- What does Gracious Professionalism mean to you?

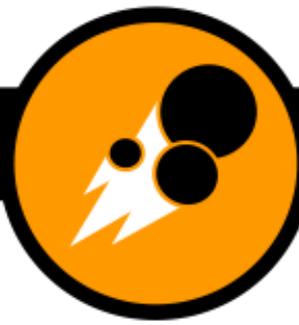
## **Imagery Award in honor of Jack Kamen**

In honor of Jack Kamen, Dean's father, for his dedication to art and illustration and his devotion to *FIRST*. This award celebrates attractiveness in engineering and outstanding visual aesthetic integration of machine and team appearance.

- Identity Standards Document
- make pit look nice
- robot is powder coated and lights (robot card)
- team spirit! team cheer/flag/driver outfits/etc.
- pins/buttons/signs/team giveaways

### Common Questions

- What was your major design motivation?
- How did you design your robot to have aesthetic value
- How did you develop team spirit?
- Show me your identity standards.
- How is your team spirit different from last year?
- What is your objective with having aesthetic value?



# Team Neutrino

**FIRST Robotics Team #3928**

## **Industrial Design Award *sponsored by General Motors***

Celebrates form and function in an efficiently designed machine that effectively addresses the game challenge.

- robot card
- CADD models

### Common Questions

- How does our robot address the challenge?
- Can you tell me about your robot?
- What was your design process?
- How long did it take you to design the robot?
- How do the mechanisms work?
- What challenges did you overcome?
- What factors limited your design?
- What was your major design motivation?
- How did you design your robot to have aesthetic value?

## **Industrial Safety Award *sponsored by Underwriters Laboratories***

Celebrates the team that progresses beyond safety fundamentals by using innovative ways to eliminate or protect against hazards.

- Safety Handbook
- Safety Captain

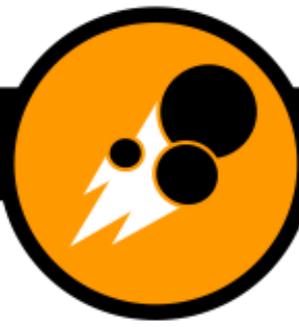
## **Innovation in Control Award *sponsored by Rockwell Automation***

Celebrates an innovative control system or application of control components – electrical, mechanical, or software – to provide unique machine functions.

- Schematic diagram of robot electronics

### Common Questions

- Is there anything that stands out about your robot/control system?
- What makes this robot different from any robot you've ever created?
- What makes your programming innovative?
- What makes your wiring innovative?
- What makes your design innovative?
- What makes your drive train/lift/other systems innovative?
- How did you design your robot?
- Is there a specific strategy/field element your team chose and why?
- What makes your strategy different than everyone else's?



# Team Neutrino

**FIRST Robotics Team #3928**

## **Judges' Award**

During the course of the competition, the judging panel may decide a team's unique efforts, performance, or dynamics merit recognition.

- There's not much you can do for this one; it's up to the judges to recognize a team that doesn't quite fit a category but is deserving of recognition.

## **Media & Technology Innovation Award *sponsored by Comcast NBCUniversal***

Recognizes the team that develops and implements the most outstanding digital experience, marketing strategy, and rationale for digital channels to disseminate content to its audience and further the *FIRST* mission.

- Tianxin's anecdote (joined the team because she saw our website)
- printouts of website
- printouts of other social media
- Identity Standards Document and how it was implemented

## **Quality Award *sponsored by Motorola***

Celebrates machine robustness in concept and fabrication.

- robot card
- CADD models
- Provide evidence that our robot is robust in concept and fabrication.

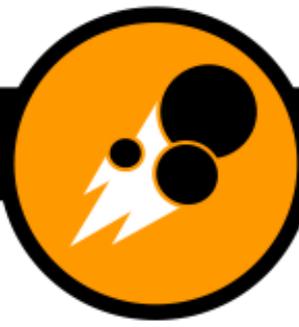
## **Common Questions**

- What makes your robot different than everyone else's?
- How is your robot robust?
- How did your design process make your robot stronger?
- Is your robot easy to maintain and why?
- Is everything easily accessible and protected?
- What part of your robot had the most design work?
- What part is the most complicated and why?
- How did your team design the robot?
- How did the fabrication process make your robot stronger?

## **Team Spirit Award *sponsored by Chrysler***

Celebrates extraordinary enthusiasm and spirit through exceptional partnership and teamwork furthering the objectives of *FIRST*.

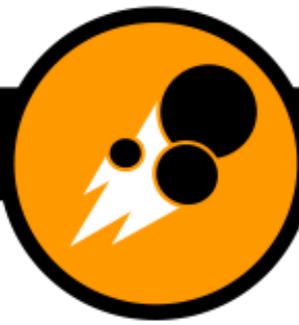
- pictures of team spirit supplies



# Team Neutrino

**FIRST Robotics Team #3928**

- slogan = Aim Higher!



# Team Neutrino

**FIRST Robotics Team #3928**

## **Fundraising**

As Jeremy Grzywacz used to say, "You are in charge of making sure the team can pay for all the stuff I buy for the robot." On Team Neutrino, fundraising used to be directly organized by the Co-Captain, but is now organized by the Fundraising Manager. By the end of the 2015-2016 season, Team Neutrino should be in a position where we have enough sponsors that we're pretty sure will continue to donate the same amount annually to fund at least 66% of our expenses. The Fundraising Manager is in charge of attaining new sponsors, organizing fundraisers, and maintaining communication with new and current sponsors throughout the year.

## **Local Businesses**

During the fall of 2013, a few members of our team met a several times to discuss getting potential sponsorships in our community. We started by brainstorming a list of businesses we thought might be willing to donate. On the list were companies like car dealerships, manufacturing companies, and restaurants. Then we divided up the companies between each of us, and each person visited the companies to encourage them to sponsor us. We filled out the "Business Contact Sheet" (found on the Neutrino hard drive under 04-Fundraising> Sponsor Packet) so we could have all the contact information for the business in one spot. A typical initial sponsor visit might look something like this:

You: "Hi, I'm from FRC team 3928. Can I speak with a manager about a donation request?"

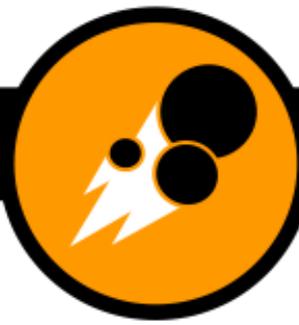
Manager comes. "How can I help you?"

You: "I'm from FRC team 3928, and I'd like to talk to you about potentially sponsoring our team."

Manager: "Okay."

You: Explain FIRST and FRC. Keep it short and to the point; if they have questions, explain more in depth. Explain the mission of your team and why it is important that you have necessary funding. Explain what the money will be used for and/or give an overview of team expenses. Both Team Neutrino's mission statement and our overview of team expenses can be found in our business plan.

From here, you can hand them a packet with your team's pamphlet and information about FIRST. What our team did was put together a bunch of folders with our



# Team Neutrino

**FIRST Robotics Team #3928**

business card, pamphlet, FIRST promotional pamphlet, previous year's robot card, sponsor letter, and packet with more information. These documents can be found on the team hard drive under 04-Fundraising> Sponsor Packet. Editable versions of several of these documents can be downloaded from our website at <http://www.teamneutrino.org/resources/fundraising/>. Finally, answer any more questions they have, fill out the Business Contact Sheet and leave your contact information with them. If they don't get back to you within a week, call and/or email them to ask where they are in their decision-making process and if there are any questions you can answer.

Team Neutrino found that writing up a general sponsor letter was very helpful. It was a quick and easy way to reach out to sponsors when we didn't have enough resources for a bunch of sponsor packets. If you or someone else on your team is going to write one, I suggest including a BRIEF overview of FRC, your team, contact information (we put my information and the parent leader for the fundraising sub-team's information), and what your planned budget is. Also include descriptions of what you will do to thank them. The nice thing about having a sponsor letter is that you can edit a few things and address it to a specific business. The sponsor letter should be no more than a page in length.

Team Neutrino has some year specific things in the sponsor letter, including "fifth season team," the section on our budget, and the contact information. When the fundraising manager updates this letter for a new season, he/she should save it as a new document called "Sponsor Letter Revised #" as both a word document and a pdf. That way, we can save all our old versions. It is also a good idea to save a version for each specific sponsor when possible. To do this, change the "To our business community" to "Dear <company's name>" and save the document as "Sponsor Letter Revised # - Name of Company" as both a document and a pdf.

Some videos I like to show to sponsors or students interested in joining our team are listed below.

Our season wrap-up videos: [2013](#) [2014](#)

FIRST kickoff video from 2008 (it's the best! — more geared toward interested students) <https://www.youtube.com/watch?v=kdB6qqKu7ms>

FIRST promo video with Morgan Freeman (good overview of why FIRST is a great cause to donate to) <https://www.youtube.com/watch?v=i1QyM9WTF18>

## **Corporate "Big Name" Sponsors**

For corporate sponsors that are located close to you or businesses that you are hoping will donate in the \$3000-\$6000+ range, I recommend visiting them with



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your robot. Obviously, if this is your team's rookie year, you won't have a finished robot to show them, however, if you have an offseason project that you built, videos of other team's robots, or a nearby FRC/FTC robotics team that could help you out, that should work for this year. Call or email the company to set up a meeting time. The email should look something like this:

Hello, Mr. Haberger, [or the name of the company you're writing to]

My name is Rucha Kelkar, and I am the Fundraising Manager of FRC Team Neutrino 4-H, a high school robotics team designed to help students gain experience in the STEM fields.

Our team is wondering if you would like to become a sponsor of our team, and how we could make a donation request. Short term, your donation would be used to help Team Neutrino as we build a robot to compete in this year's FIRST Robotics challenge, which will be revealed globally on January 9th. Long term, your donation would help future engineering employees gain knowledge and experience about the STEM fields. Our team also does outreach events to the community to help spread awareness for this cause. For more information about Team Neutrino, visit our website at [www.teamneutrino.org](http://www.teamneutrino.org).

If it is okay with you, I would like to bring a few members of the team in to give a presentation. Please send me some times you have available to set up a time to meet. Thank you.

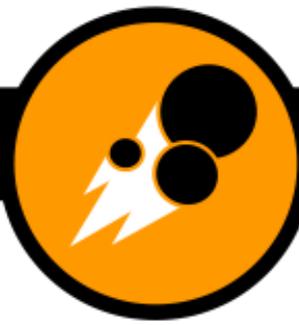
Please read the attached sponsor letter for more information about the levels of sponsorship, FIRST, and Team Neutrino.

You can contact me at (email), or my home phone, (xxx)-xxx-xxxx.

Thank you for your time and consideration!

Rucha Kelkar  
Fundraising Manager  
FRC Team Neutrino 4-H

I created a PowerPoint (found on our website under fundraising resources and the team hard drive under 05-Public Relations> Presentations) in 2013 that our team updates annually that we show to sponsors such as Quality Manufacturing when we go visit them. When we show this, we emphasize how important sponsors are to our success as a team. If you decide to make one for your team, I suggest that you



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follow a similar outline to the ours, but if you are a rookie team, you may want to include more information about what FIRST and FRC are and what you are hoping to accomplish this year (maybe paraphrase your mission statement?).

Another, less successful, way you can reach out to large companies is by calling them on the phone and saying "Hi, I'm from a high school robotics team in Iowa, and I am calling to ask about a donation request," or something along those lines. We have not had any success with this, but it never hurts to try, right? Typically, you'll either be on hold for a very long time, or someone will direct you to their website where they might have a grant process, which brings me to the next section.

## **Grants**

I cannot emphasize enough how much grants can benefit an FRC team. They are a way to get a donation without having to set up a business visit or call anyone. The trick about grants, though, is the time frame. Some grants will only be open for part of the year, some will only be open to organizations with an employee as a mentor, and so on. That being said, Team Neutrino has had much success with grants such as Monsanto Fund and 3M. It is a good idea to attach a sponsor letter (if allowed) to forms like Casey's, Bobcat, and Panera if you are mailing them in.

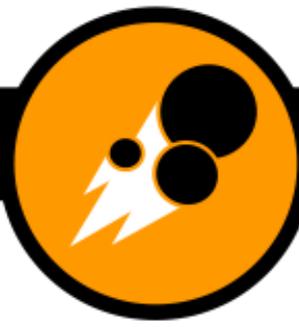
To find out if a business has a grant process, visit their website and look for a page called something like "community impact," "charitable giving," or "corporate responsibility." Next, send the link to the website's page with the grant application on it to the Fundraising Manager and have him/her fill it out with you. Put the Fundraising Manager as the primary team contact and the Lead Mentor for the secondary contact. In 2015, we created a google sheet to collect all the information for various grants in one location.

## **Business Plan**

The fundraising manager is also in charge of revising the team's business plan each year. See the section on writing the business plan in the description of the Entrepreneurship Award.

## **Managing the Fundraising Sub-Team**

The fundraising sub-team has a lot of responsibility, since without them, the team wouldn't have enough money to function. Historically, the fundraising sub-team on Team Neutrino has ranged from including most of the team (2012), to a smaller group of people (2013-present). I think it works best to have a small group of people who make up the core of the fundraising sub-team, but then include as many members and mentors from the team for sponsor visits and things like that. I would go as far as to say that every member should attend at least one sponsor visit a year at least as an observer.



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The core of the fundraising sub-team needs to have members who are strong writers and public speakers. This might mean that you need to recruit members specifically for this role, but maybe not.

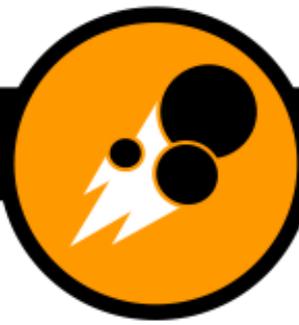
## **TMI and Cultivating Relationships**

Something I would like to emphasize to the rookie teams because this may seem a bit overwhelming at first is that I created all these supporting documents with the help of mentors over 2 1/2 years of being on the team. A lot of this I had to make from scratch, and so it took a lot of time to come up with it all. Hopefully you'll be able to use these documents as a jump-start for creating your own to cut down on some of that time.

Successful teams like 1986 Team Titanium have already worked out a system that works for them to get sponsors, and they have cultivated relationships that were built to last. Going off of that, it is vital to keep your relationships with sponsors strong after they donate to you so that they are more likely to keep donating for future seasons. Strategies that Team Neutrino implements include newsletters, thank-you visits, demonstrations, and updates during competitions.

## **Stay in touch**

I mentioned it a little above, but it really is important to keep calling and/or emailing potential sponsors about their possible donation until you get a clear yes or no. It would be unfortunate to email a company once and then lose the sponsorship opportunity because you failed to follow up on the original phone call/visit/email. I think it's a good idea to give them a week to reply to the original message before following up, and then call if email did not work.



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## **Public Relations (PR)**

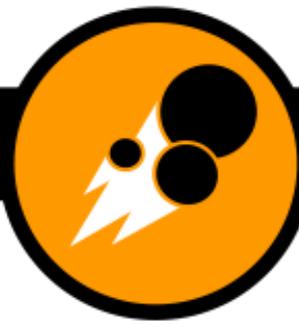
In order for us to help achieve FIRST's mission of culture change, we need to spread the message of FIRST to the community. Public relations is one method of doing that, as is outreach. During competitions, the Public Relations Manager is the lead pit representative who talks to judges and other teams about Team Neutrino and our robot. During the off-season, the Public Relations Manager's job is to contact local media to get coverage of significant events, such as our Robot Reveal.

## **The Press**

Historically, Team Neutrino has not done much with getting media coverage for local events, but this is something I think we should work on. FINISH LATER WHEN HAVE MORE INFO.

## **At Competitions**

EVAN HELP



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## **Social Media**

Team Neutrino has a pretty good social media presence. We have Facebook, Twitter, and Flickr pages, as well as an awesome website. Our team uses each media venue for a different purpose to promote FIRST, FRC, and our team. The Social Media Manager is in charge of making sure that the team's presence on social media sites is accurate and up-to-date.

## **Website**

Our team primarily uses our website ([www.teamneutrino.org](http://www.teamneutrino.org)) to update the online community about our team. Historically, there has been a separate Website Manager who is in charge of keeping all of the pages up-to-date and posting on the blog about each new event.

## **Facebook**

Our Facebook page is found under "FRC Team Neutrino #3928." This is a public space to share team updates with our following communities. We have it set up to post whenever we have a new blog post on our website. Each year, the cover photo needs to be updated with the new team picture, which is taken at the Robot Reveal. The list of awards (according to The Blue Alliance) under the "Page Info" section also needs to be updated each year.

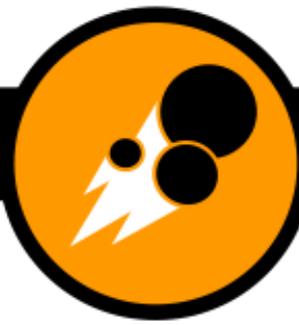
## **Twitter**

Our team's Twitter handle is "frcneutrino." Short, quick updates are posted throughout the year, but especially during competitions. The Social Media Manager is in charge of broadcasting our match results and other updates at competitions via our Twitter page.

## **Flickr**

Our central storage location of all team pictures and videos is our Flickr page. The Social Media Manager might delegate the organization and upkeep of the Flickr page to the team photographer. In 2015, we reorganized the Flickr page. It should now follow the pattern described below.

All the pictures prior to June 2015 should now be put into an album and tagged with the album name. Ideally, someone should go through each album and rename and tag the pictures based on the event as well (that wouldn't be necessary for the competition albums). In some of the past seasons, all the outreach events have been grouped together into one large outreach album, but the Flickr Manager should go through those albums and split the pictures into offseason, preseason, and build season events. Lastly, someone should go through the albums again, pick



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out the best ones, and put them into a season highlights folder. Rucha and Tianxin tried to do this in 2015, but there were a lot of pictures that weren't in any of the albums.

For new pictures, they should be uploaded, named as the event, and then put into the album based on what season or competition they were taken at/during. They should be tagged with the event name and the album name. Each picture should only be put in one album to avoid confusion. The only duplicated photos should be in the season highlights album.

Note that for Team Neutrino, the season starts in September 1. Preseason goes from September 1 to the day before kickoff. Build season lasts from kickoff to stop build day. Competition season lasts from the day after stop build day until the last day of our last official FIRST competition (either our last regional or the World Championships). Offseason lasts from the day after the last day of our last competition to August 31. The dates of each season should be in the album descriptions for each album.

There are also collections, which are groups of albums. Collections are titled yyyy-yyyy and include albums from September 1 of the first year to August 31 of the second year in the title.



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## Videography

Team Neutrino creates four main videos a year. Additional videos, such as slideshows for our summer camps, should be made as needed. All videos should be posted to our YouTube page upon completion.

## Safety Animation

Prior to the 2015-2016 season, Team Neutrino had not created a safety animation. My younger brother Nathan created one for the FIRST Stronghold game using Blender. Here is an abbreviated version of the Safety Animation Contest Information provided to all teams by FIRST.

**Theme:** A new theme is created for each year. Teams are encouraged to apply the theme to concepts from the FRC Safety Handbook.

**Criteria:** Animations should be no more than 40 seconds long, including opening titles and credits. Animations should be submitted electronically as a .AVI, .MPEG, .MP4, or .WMV file. Please note that the winning submission may be asked to reformat their video into a higher quality format in order to be shown at FRC events. Any animation that does not meet these criteria will automatically be disqualified. FIRST asks that the submitter review their submission after uploading the video to ensure it uploaded correctly.

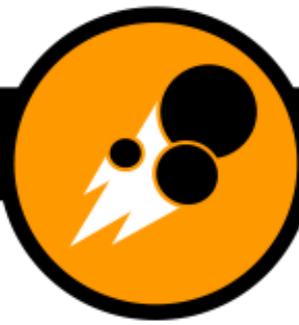
**Copyright:** If using copyrighted music, you must have written permission. If using Creative Commons Music online, the music must be used in accordance with the appropriate license and properly attributed.

**Submission:** Animations must be submitted by your team's student award submitter in STIMS between TBD dates in early October and December.

**Judging:** Submissions will be reviewed and evaluated by UL designated judge panel. This is independent of current FIRST Program competition season judged awards. The winning submission will be announced through an FRC Email Blast and the FRC Blog. The winning team will receive a trophy and their video will be played at FIRST events.

## Chairman's

See the Awards> Chariman's> Video above.



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## **Robot Reveal Slideshow**

At our robot reveal each year, someone on the team puts together a slideshow of pictures and video clips from the build season. To create the slideshow, go through the Flickr album for the current season's build season and download the best pictures. Try to get a mix of all team members, with at least one good picture of everyone. Next, open iMovie and insert all the pictures you downloaded. Make sure they're still in chronological order or some other order that makes sense. Choose a nice theme, insert titles and a music track, and get it approved by the Photography/Videography Manager, the Captain, and the Co-Captain.

Some teams make a video to reveal the capabilities of their robot. Team Neutrino first made one for FIRST Stronghold, and it should be in addition to the slideshow.

## **Season Wrap-Up**

After all the competitions, a season wrap-up video should be created that has pictures and video clips of all the competitions (and some of build season, too). Watch our season wrap-up video from 2013 Ultimate Ascent as an example.



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## Outreach and Event Planning

The first outreach event for Team Neutrino that I attended was Robotics Day at the Science Center of Iowa in July 2012. Even though I wasn't really sure what was going on, I learned a little about what outreach events were and what they meant to our team. Community outreach and volunteering are essential for FRC/FTC teams to engage in in order to help spread the message of FIRST. Here, I have laid out general guidelines for learning about our past outreach events and setting up new ones.

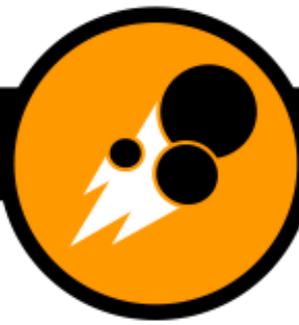
## Event Comment Sheets

In the 2013-2014 season, I started a record of all our outreach and volunteering events, as well as our summer camps. I hope that future Co-Captains and Outreach Managers keep this up, because it is a GREAT record keeping tool and way to remember things you want to improve for future years. I strongly encourage other FRC/FTC teams who are reading this to adopt a similar documentation strategy for their outreach.

An event comment sheet starts with the name of the event in centered, 18 pt. Impact font. The time and date are listed in the next line in centered, 10 pt. Georgia font. The next line has "Preparation" in left justified, 14 pt. Impact font. Describe what the team did to prepare for the event (including any important names and emails/phone numbers of contacts) in a paragraph in left justified, 12 pt. Verdana font with a ½" indent with space after the last paragraph. Add another section for a description of the actual event, an impact summary, and a list of suggestions for future events. (If you don't want to go through the hassle of matching all the formatting, just create a copy of a previous event comment sheet and replace text.)

When describing the event, be as specific as possible. Use past event comment sheets from similar events as examples. Make sure to include a description of what you brought with you and what you did. For the impact summary, include an estimate of how many people were there and a description of what the team's impact was on these people. For the attendance estimate, try to get as close as you can to the actual number by emailing the event coordinator for their attendance estimate.

It's also important to make sure you get good feedback on how the event went. Before you leave the venue, ask the team members and mentors who attended what was good and what they thought could be improved. I typically initiated a



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conversation on the car ride home and took notes in a notebook to type up later, since people are more likely to respond and give good feedback then instead of in a reply to an email later.

## **How to set up an event**

A full list of outreach events we attended each year can be found in the annual reports (team hard drive> 02-Graphics> Annual Report) and the tabulated outreach (Google Drive). Most events that the Outreach Manager will be managing the team participated in in the past. For events like these, start by reading event comment sheets for the event from past seasons. Most (Ames High Club Fest, Edwards Elementary School Science Night, all the Science Center of Iowa events, etc.) should have a contact you can email to ask if the team can participate in the event again for this year. Do this about a month or two prior to the date of the event. *To be involved in the Iowa State FLL State Championships, you actually have to contact them in November.*

Once the team is signed up for the event, send a description of the event (name, date, time, short summary of what it is) to the Co-Captain to include in the team email so team members and mentors can sign up to do it. If you're planning on bringing the robot to the event, make sure at least one member of the drive team signs up. If the event is out of town, ask parents of kids that are going if they could drive a carpool. If the event is over lunch and/or dinner, make sure to let students know they should bring food or money to buy food.

In 2015, we had a long clear tote with outreach materials, a green tote with tablecloths, and a clear box with drive modules to display. Make sure you bring what you need to the event.

Beyond those general guidelines, each event also might need additional prep work. Once again, check the event comment sheets for descriptions of what else you need to do.

## **Mentoring Programs**

Every year since the team was founded in the fall of 2011, we've participated in the Ames Middle School FIRST Lego League (FLL) scrimmage. Starting in December 2015, we actually ran the event (according to the Chairman's definitions published that year). In fall of 2014, we strengthened our relationship with Ames Middle School and added a mentoring program. One to two Neutrinos mentored each of the four FLL teams. We volunteered for the try-outs, attended all of their meetings, volunteered for and presented at the scrimmage, and attended their competitions and end-of-season party. This mentoring program brought great success to the teams, with three out of four teams winning awards and two teams advancing to the state championship. This mentoring program will hopefully continue for future



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seasons, especially with leadership of the AMS FLL teams being transferred from Mrs. Dixon to Mr. Mattocks.

In 2015, I worked with Mrs. Green, the technology education teacher at Edwards Elementary school, to start four Jr. FIRST Lego League (Jr. FLL) teams (three of which were all-girls) collectively known as Club Proton. Team Neutrino sponsored the teams and led all the meetings and the final exposition in May. We expanded this program to Sawyer Elementary and moved the season start date back to November with their expositions in March and April. Proposals to the schools' PTOs and comprehensive lesson plans are posted on our team website.

## **Camps**

In June 2015, Team Neutrino helped teach five summer camps for elementary-middle schoolers, including Lego Mindstorms, Engineering 0.101, Beyond an Hour of Code, and two Maker Tech Camps. We developed curriculum and lesson plans for Lego Mindstorms and the Maker Tech Camps. Over 100 students total participated in the camps in this year alone. Information for Lego Mindstorms, Engineering 0.101, and the two versions of Maker Tech Camp can be found on our website at <http://www.teamneutrino.org/resources/camps/>.

The Outreach Manager is in charge of organizing our camps each year and creating new ones if the team decides to do that. The actual documents for the curriculum and lesson plans from our 2015 camps can be found on the team hard drive under 11-Outreach. I made a binder with paper copies of everything as well, and this should be added to as new camps are developed.

## **Managing the Outreach Sub-Team**

The Outreach Manager should be the main contact for the team for all events, mentoring programs, and camps. Most of the work for outreach should be able to be done by just the Outreach Manager and maybe a mentor. I started an outreach sub-team in 2015 to plan our summer events and camps in order to incorporate more underclassmen into this area. I have a few tips for the Outreach Manager below.

## **Documentation, Documentation, Documentation!**

The Outreach Manager should be doing a lot of documentation and record-keeping for the team in order to keep track of all we do and make it easier to get information for the Chairman's submission. Here, I have described all the methods I implemented and hope continue.



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## Event comment sheets

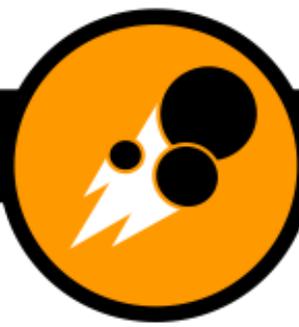
An event comment sheet needs to be created for each event and printed out on orange paper for the Event Planning and Documentation binder. Please see above for more details and instructions.

## Tabulated outreach

We started this spreadsheet during the build season of 2015, but it should have information for *every single* outreach activity Team Neutrino has done since it was founded in fall 2011. The sheet is organized chronologically and separated by pre-season, spring (January 1 – May 31), and summer (June 1 – August 31) for each year. For each event, the name, date, number of man-hours, attendance estimate, and a very short description of what we did. The sum of man-hours and attendance estimates is also included for each section. A shortened version of summer 2014 section is shown below as an example.

<b>June 1st 2014 - Aug 31st 2014</b>		<b>totals:</b>	<b>281</b>	<b>12920</b>	<b>2</b>
City of Ames Visit	6/5/2014	6	8	We visited the City of Ames Electric Company. We presented the PowerPoint in their conference room, then we answered questions, finally, we went outside to demo the robot. the company was happy to have us and pleased to hear how our season went.	
Super Summer 2014	6/9/2014	108.7 5	20	A few Neutrinos volunteered for this event held by ACSD in AMS, we helped teach kids using NXT and helped them with the previous FLL challenge.	
4th Parade 2014	7/4/2014	12	14,000	The team joined the 4th of July parade in Ames. We had 1 person holding the driver station, two people holding a Neutrino banner and 1 person pull the wagon with the robot on it.	
Iowa State Fair	8/17/2014	4 55	10000 0	The team went to Des Moines for the Iowa State Fair. We shared our space with team 4646 ASAP. We demonstrated our robot to many people and gave several speeches to several people that are interested in FRC.	

At the bottom of the sheet, sums for man-hours and attendance estimates are calculated for each season (Sept. 1 – Aug. 31) and each year (Jan. 1 – Dec. 31).



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The Outreach Manager will need to update this document after every outreach event so that it stays accurate. Prior to competitions, he/she should also update the Word document version located in 03-Awards> Judges' Packet and, once it's approved by the Co-Captain, print 5-6 copies to have in the pit.

## **Event Planning and Documentation Binders**

I made binders for the Ultimate Ascent, Aerial Assist, and Recycle Rush seasons for Event Planning and Documentation. Future binders will be put together by the Outreach Manager. The binders are organized chronologically by month and include team emails, event comment sheets (printed on orange paper), emails and forms for and about events, and anything else you think needs to be included. The Events and Programs section of the Annual Report should be printed and slipped into the front and back covers of the binder.

It's important to have something like this for our team since otherwise, information included in emails would become lost when team members graduated. (It doesn't cut it to copy [neutrinofrc@gmail.com](mailto:neutrinofrc@gmail.com) on everything, trust me—paper is way better.) This way, you don't need a password to have access to all the information about past events.

## **Closing Comments**

So that's about it for everything non-technical! Remember, as Co-Captain, you really need to make Team Neutrino your top priority after family, church, and school/homework. You have several late nights ahead of you, but it will all be worth it in the end! ;) The mentors taught me a valuable lesson, though. They told me that being a leader was not about doing everything yourself, it was about delegating tasks to the rest of the team. Being a considerate person, I did not want to force anything onto the other members who had signed up to be on the team because they wanted to build a robot, not write, budget, etc.! Over time, I lost this inhibition, and started to ask for help more and more often. This proved to be highly advantageous to both me and some of the other members. They were more than happy to help, and I was able to focus more on what I needed to get done on the team.

Bottom line is that you got this! The mentors appointed you for a reason, and everyone has your back. Best of luck as the new Co-Captain!! ;D