



FRC TEAM 1189

EST. 2002

# gearheads gazette

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## Build Season is Here



FIRST Stronghold. A new season, new faces, and new challenges.

Alliances of three robots each are on a quest to breach their opponents' fortifications, weaken their tower with boulders, and capture their tower. Alliances first score points by trying to autonomously breach opponents' defenses, scoring boulders through goals in the opposing tower. Then human drivers take control of their robot to defend their castle, retrieve boulders, defeat defenses, score goals in the opponents' tower, and capture and scale the opponents' tower.

In a new twist, the field is filled with moveable defenses that will change configuration every game, based on the defensive decisions of the opposing alliance, as well as two defenses selected by the spectators at competition. For more on the game visit the FIRST website.

**inside:**

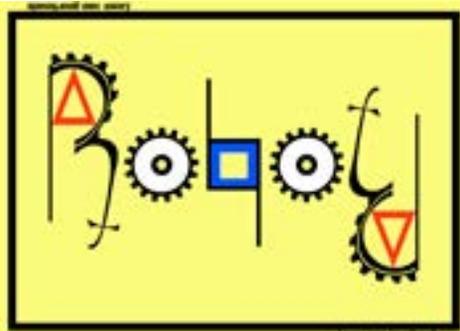
Meet the mentor, Ask a robot, Team make-up, and first week progress

# FedEx Innovation Challenge

It was three days before “bag day”, FTC team mentor and Gearhead uber-parent Eileen Reickert, found out about the FedEx challenge. She knew the Gearheads, a diverse team of creative problem solvers, could tackle it while having a good time. When she brought this extra task to 2015 lead mentor, Don Pata, nearly died of laughter. Mrs. Reickert, undeterred, brought the challenge to the media team, who diligently worked on the four part social media challenge. They completed the challenge and submitted their solutions via twitter.

The challenges were:

- A science challenge based on Fluid displacement and Louis & Clark’s canoe
- Create an ambigram that says “Robot”-Ambigrams read the same when flipped



- Create a movie telling why your mentors are the best
- Solve a circuit logic puzzle and deliver your solution as a music video

Mrs. Reickert was proud that they tried their best, but was not expecting them to win due to the rushed work on the challenges. Everyone forgot about the FedEx challenge until Mr. Pata received an email commending the Gearheads on their accomplishment. That is, in sports terms, “when the crowd goes wild”. They hadn’t even been to states, but the Gearheads knew they already had a grand accomplishment under their metaphorical belts.

While success is often its own reward, the prize was something completely unprecedented; the team would get to send a delegation of 4 students and 2 adult mentors to New Hampshire to pitch a future game concept to the FIRST Game Committee. They were also invited to attend Dean Kamen’s birthday

party, visit FIRST HQ, and tour DEKA (Dean Kamen’s company).

To help prepare the team for their first major corporate pitch we hosted two executives from FedEx in our shop who gave the pitch team-Aiden Clements, Rey Kam, Anna Karcher, Aiden Reickert, and Nick Santrock-pointers on their pitch. Russ Wheaton and Cisco Sanchez spent a highly productive day at our shop, learning to fabricate, build, design, and drive robots.

It may have paid off even more than ever anticipated, as the resemblances between our pitch and the 2016 game are striking.



Support our team

# MEET THE MENTORS: MR. MCCARROLL

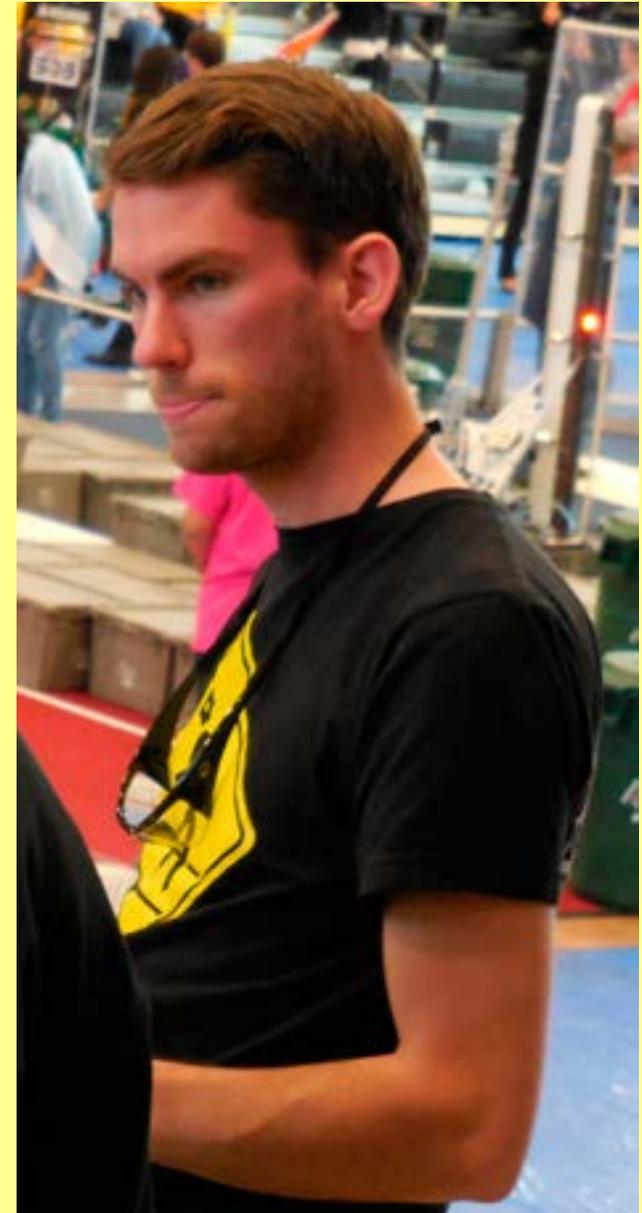
Mr. McCarroll is the Gearheads' new mentor for our 2015-2016 FRC season. Even though it's only been a matter of months, it seems like we know all about Mr. McCarroll-or do we?

Mr. McCarroll, besides being an incredible leader for us, is an amazing teacher at Grosse Pointe North High School. He has taught technology and a variety of Social Studies classes. Currently, he teaches World History and Economics.

In his copious spare time (as if...)Mr. McCarroll is also a pole vault coach, our SAT district coordinator, the 2018 North class advisor, and the mentor of the club Spark Innovation. He is a

leader in all ends, and a fun guy all around. In his free time he enjoys building doo-hickeys, going to restaurants, playing with his dog, and spending time in the good ol' outdoors.

When asked about this upcoming season, he is very optimistic for this year's competition season, as well as for seasons to come. He said that he was a little nervous too, but that is mostly forgotten by his excitement of this year and build season. We are all excited for the Gearheads this year, and can't wait to see what Mr. McCarroll has planned for us this year.





Our robots have been programmed intelligently. So, naturally they are able to assist humans with their problems. If you have an issue that you would like our robots' advice on, please feel free to

send them in. Oddjob, Howie, and Spock are all lending a hand with their helpful advice. One warning, they only know the FIRST Robotic Competition game rules for the current season, so their advice can seem a little odd.

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Dear Spock,

Lately my "friend's" ideas about how we spend our time together are a little bit different than mine. What kind of interactions do you think are appropriate, before we intrude on each other's private and personal spaces?

- InterestedInInteraction



DEAR INTERESTEDININTERACTION,

**3.4.6 ROBOT TO ROBOT INTERACTION**

**G20** ROBOTS MAY ONLY ENTER OR EXIT THEIR OPPONENT'S SECRET PASSAGE FROM/TO THE OPPONENT'S COURTYARD. A ROBOT IS CONSIDERED TO BE WITHIN THE SECRET PASSAGE ONCE THE ONLY CARPET THE ROBOT IS IN CONTACT WITH IS THE CARPET INSIDE THE SECRET PASSAGE.

VIOLATION: FOUL. IF REPEATED, TECH FOUL

- END TRANSMISSION, SPOCK

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Dear Odd Job ,

Due to my lack of experience, I have had limited interaction with my friend Arena. What should I do? Please Helpppppp!!

-Frantic Fred

DEAR FRANTIC FRED,

**3.4.3 GENERAL RULES**

**G12** THE FOLLOWING ACTIONS ARE PROHIBITED WITH REGARDS TO INTERACTION WITH ARENA ELEMENTS (ITEMS A-E )

EXCLUDE ANY DEFENSE, RUNGS, AND BOULDERS)

- A. GRABBING
- B. GRASPING
- C. ATTACHING TO (INCLUDING THE USE OF HOOK-AND-LOOP TAPE AGAINST THE FIELD CARPET)
- D. GRAPPLING
- E. HANGING
- F. BECOMING ENTANGLED
- G. DAMAGING

- END TRANSMISSION, ODDJOB

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Dear Howie,

I am stuck between asking two different guys to the Sadie Hawkins dance, but am unsure who will be a better match. They have each asked me to go out before the dance, any advice how to decide on these "pre-dates"?

-Damsel in Distress



DEAR DAMSEL IN DISTRESS,

**5.2.1 SCHEDULE**

PRACTICE MATCHES ARE PLAYED ON THE FIRST DAY OF EACH EVENT. THE PRACTICE

MATCH SCHEDULE IS AVAILABLE AS SOON AS POSSIBLE, BUT NO LATER THAN THE START OF PRACTICE MATCHES. PRACTICE MATCHES ARE RANDOMLY ASSIGNED, AND TEAMS MAY NOT SWITCH SCHEDULED PRACTICE MATCHES.

- END TRANSMISSION, HOWIE

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Dear Odd Job,

My health teacher keeps mentioning "protection". What is this protection he speaks of?

I really want to know because my friends have been using protection now. Protection from what?! Everybody knows what I don't know.

-ThoroughlyConfused



DEAR THOROUGHLYCONFUSED,

**5.5.1 SAFETY, SECURITY, AND CONDUCT RULES T1**

ALL EVENT ATTENDEES MUST WEAR SAFETY GLASSES AND CLOSED-TOED SHOES WHILE IN THE ARENA.

- END TRANSMISSION, ODDJOB

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Dear Spock,

My friend has been hanging out with way too many guys for my liking lately. I'm worried for her well-being. Is there any advice you would recommend I give her?

-Troubled Tina

DEAR TROUBLED SPOCK,

**3.4.9 BOULDER RULES**

**G38** ROBOTS MAY NOT CONTROL MORE THAN ONE (1) BOULDER AT ANY TIME.

VIOLATION: FOUL PER EXTRA BOULDER

- END TRANSMISSION, ODDJOB

# TEAM MAKE UP AND PROGRESS

Our team is broken up into five different guilds, or sub-teams. Each guild (sounds more within the theme than sub-team doesn't it?) takes responsibility for different aspects of keeping the Gearheads Enterprise going. The guilds are Build, Fabrication, Design, Media, Safety, and Controls.

**Design-** The design guild creates the CAD (Computer Aided Design) "digital blueprint" for the robot, including dimensions and assembly concepts. Currently in design, the more experienced designers are teaching the newer members how to use Solidworks (our CAD software) preparing for when they get assigned something to do.

Guild Captain :

•Brian

Members:

•Zach

- Griffin
- Egan
- Evan
- Clarissa

**Controls-** The controls guild designs the power system, drive train, and pneumatic systems of the robot. They program the controller and complete all the electrical engineering of the robot. Currently the controls guild is assembling prototype controls board together and teaching programming to newer members.

Guild Captain:

•Aidan C.

Members:

- Nate
- Christine
- Govind
- Jessie
- Eric

**Fabrication-** The fabrication guild creates parts for the robot based on design's blueprints. They

bend, cut, and weld sheet aluminum used for the robot frame. Widening the frame holes to host a new drivetrain and building up the practice field elements.

Guild Captain:

•Ben

Members:

- Ben
- Trinity
- E.J.
- Kyle

**Build-** The build guild constructs the robot from the blueprints made in design and the parts made in fabrication. They wire controls systems, connect the pneumatics, and bolt together the robot. This week the build team has been focusing on prototyping a drive system and shooter.

Guild Captains:

•Audrey

•Montana

Members

- Claudia
- Josh
- Joey
- Logan
- Garrett
- Tommy
- Jacob

**Media-** Ye' olde Media Guild publish the team newsletter, the Gearheads Gazette, maintain the Gearheads' website and social media. They are the communications department of the Gearheads. This first week has been very busy with An entry in the FIRST Safety Animation competition, Gearheads Gazette, the website, social media, and working on the FedEx FIRST Innovation challenge.

Guild Captain:

•Abby

Members:

- Alex
- Justin
- Olivia

- Grace
- Autumn
- Alsce
- Chloe
- Michelle
- Cherell

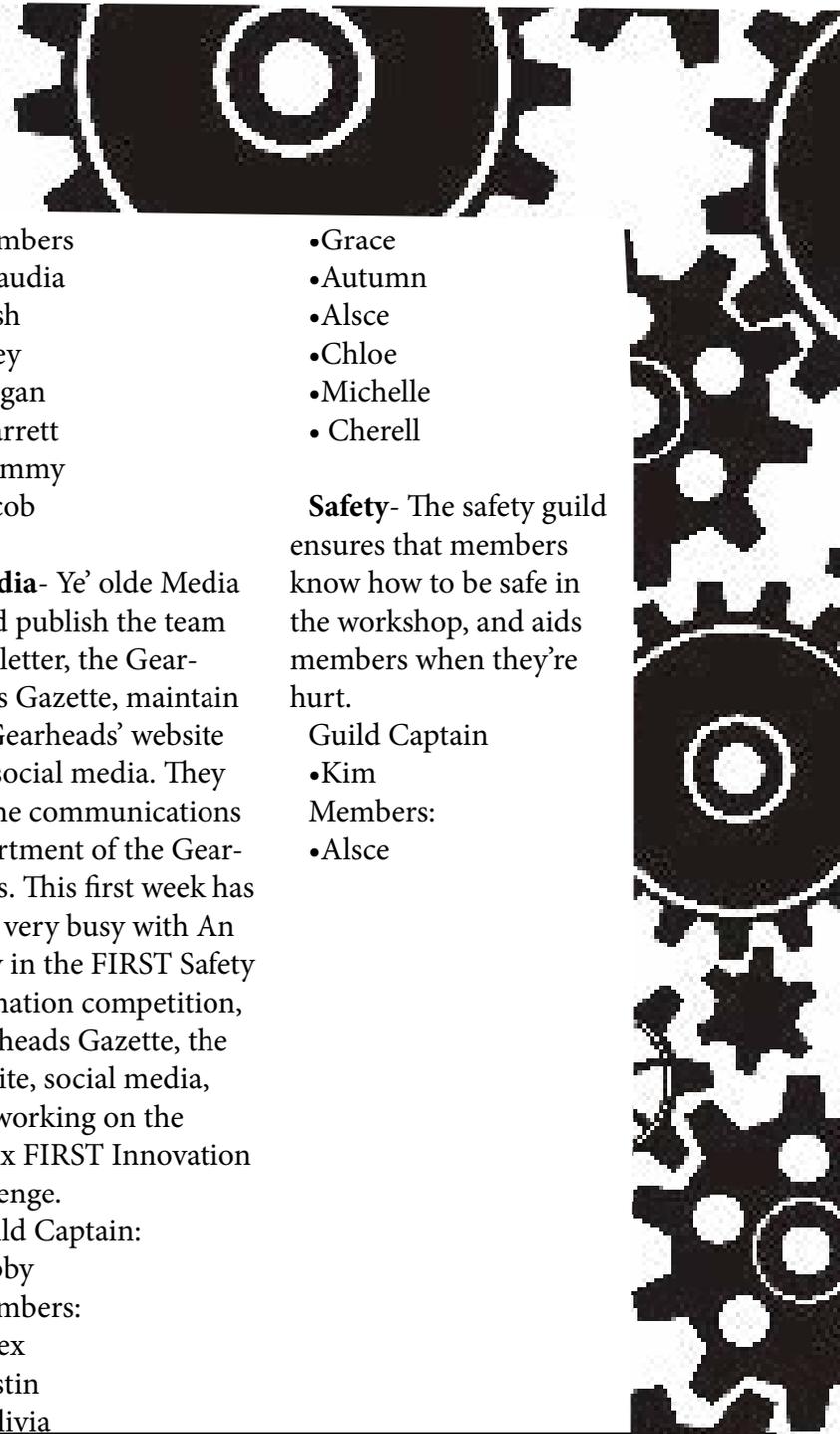
**Safety-** The safety guild ensures that members know how to be safe in the workshop, and aids members when they're hurt.

Guild Captain

•Kim

Members:

•Alsce





Running a team and building a robot (though we do more than build robots here at Gearheads) takes a tremendous amount of effort and money. We could never have achieved what we have for the past few years without the aid of our many sponsors and supporters. From corporate sponsorships and grants, to gifts-in-kind, and free software and hardware, we rely on the generosity of others to maintain this valuable asset for our schools and our community.

If you are interested in making a donation to the operation of our team you can write the team a check (make it payable to Grosse Pointe North High School, memo line for Gearheads). You can also make the donation through the Grosse Pointe Foundation For Public Education, a 501c Tax exempt non-profit in order to make your donation tax deductible.

To follow our progress visit our website, like us on Facebook, and follow us on Twitter and Instagram.