

DO IT YOURSELF:

# Girls Get Together



BROUGHT TO YOU BY



Gearbox Girls &



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# Girls Get Together

## INTRODUCTION

Gearbox Girls is the community of students on FRC team #5414, and our mission is to show girls they are creative, confident, and capable enough to be in STEM. We created the Girls Get Together event to be a way for girls to network with women in STEM fields, while conversing in an un-intimidating and open environment. It is an opportunity to get to know professionals, ask questions, gain valuable advice, and network in the world of STEM.

We started running these Girls Get Together events at FRC competitions, inviting women engineers to talk to the girls in robotics. While the Gearbox Girls of Pearadox have so much fun running this event for FIRST girls in our area, we know there is potential for the Girls Get Together to be spread even further! We are asking you, either as a FIRST team member or mentor, to work with your team and create a fun experience for the girls at your robotics competitions!



# NEED FOR CHANGE

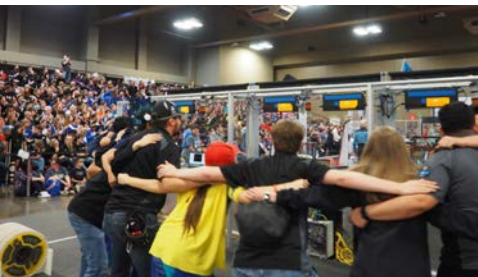
Our team has a strong initiative in reaching out to girls, fulfilling our mission statement. In so many STEM fields, the demographic is heavily male dominated. In populations of 20% and lower, girls just aren't getting into the STEM subjects like boys are, and it is not from lack of capability. Most girls have limited role models acting as motivators for them, which is what inspired us to start multiple projects towards bridging that gap. Our Girls in STEM Magazine, Gearbox Girls website, and Girls Get Together events were all made with this problem in mind.

Even FRC is male-dominated, in both the member and mentor department. Having female role models in STEM not only attracts girls to robotics, but sustains their interest, continued learning, and ultimately can make a difference in what they pursue in their future. This is why we created the Girls Get Together—and why we are trying to get others to run it as well.



## TEAM CULTURE

Not only do exercises like the Girls Get Together positively affect FIRST, but it brings a more harmonious, diverse culture to your own team—making sure Pearadox sports a supportive environment to those who may not feel comfortable is one of our biggest goals. On Pearadox we are very lucky to have many female mentors. This simple fact greatly affects the atmosphere of our team. And while the girls are the minority, they are no less empowered. In fact, in our 2019 season 60% of the team's leadership were female, which was largely due to the inspiring female mentors they've had. It proves how introducing strong females in STEM to girls can really change their outlook on robotics and confidence in general! Running Girls Get Together events will contribute to this type of culture on your team, and eventually spread to inspire those in other FRC communities too.



# Preparations

## SITE PLANNING

One of the biggest struggles we have experienced in running the GGT is not having a big enough and free space to hold the event at competitions. We've hosted GGTs in lunch rooms, classrooms, and even an outside recreational space at George R. Brown Houston Worlds. The best locations are usually in the competition site, because it makes it much easier for students to attend. The most amount of people at a time we have had is about 75 at Houston Worlds, but on average we see around 40 people. To allow for this many attendees, the configuration we like to use at our events are big tables with chairs around them, because it maintains a comfortable environment where everyone is less intimidated and can have an equal chance of participating.



Having small groups instead of one mass turns a presentation into a conversation. We've found that if we fit around 7 students and 1 volunteer at a table it would only take 5 or 6 tables to run a comfortable event. If you cannot find a location within your competition site, we recommend working with companies nearby your competition site who may have spaces like this to host a GGT later in the night. This should be a last resort however, because it would be harder to have students travel. While looking for a good site, try to look for one that you can easily direct students and volunteers to. Posting directional arrows or signs will help inform and direct people to where the event will be.

Deciding on a good time for the event is important to do far in advance, because you will need to post it on volunteer invitations. We find the best date to be on Friday, which is the first day of districts or the second day of district championships, regionals, and worlds. Picking the time of day for the event is also hard, because you will have to find a time frame where students and volunteers can attend—make sure to think of the drive team, chairmans presentations group, and scouting times. Something that will help enable people to attend would be stretching the time frame of the event over a longer period of time, like 2/3 hours, towards the end of the day so volunteers can attend after work. Our average event times are around 5 or 6 in the evening because it's while the pits are closing but before teams leave the venue.

## RESOURCES

**Shirts.** These are examples of the yearly GGT shirt designs we create and make for our team members and volunteers. As mentioned in the cost breakdown and cutting costs page (page 14), we also give these shirts for free to the first several girls who attend/register for the event as a way to boost attendance.



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!



Conversation starter posters. We have around 5 prompt posters to place at each table during the event. The guest who is "running" the table can write in dry erase marker (the posters are laminated!) the topics they want to discuss, which allows the girls to cycle around the topics they are most interested in.



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

Flyers. These are examples of flyers we print before competition and hand out/post at competition sites. On average we print about 100 copies, but it really depends on how many your students are handing out in the pits before the event.



Note: We include QR codes on our flyer for attendees to pre-register, which is another way they can win a free GGT shirt.



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

**Banner.** This is the design we used to print our retractable banner (from BuildASign.com), and we use it to help direct volunteers and attendees to the event. The banner we ordered is 72" by 36" and \$107.



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

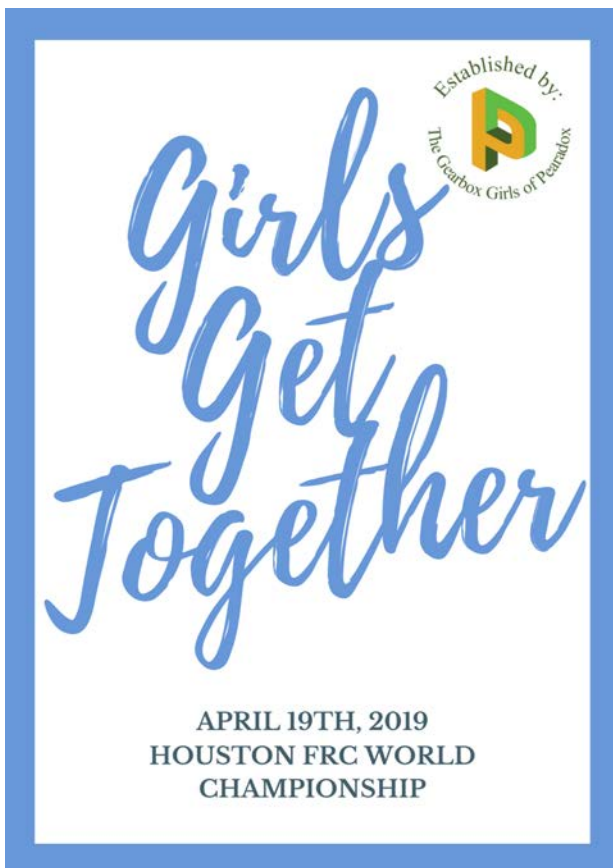
Programs & thank you cards. We print programs for our events including guest lists, conversation starter questions, our magazine QR code, a notes section, and a contact page. We also try to give thank you cards to all the guests who attend, which seconds as a business card with our contact information on it.



Thank you card front



Thank you card back



Program cover



Example Guest Page

If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

Magazine. Our girls in STEM magazine is one of our favorite things to give away at our events. STEM Savvy introduces STEM in a fun, attractive way. In it you'll find female-in-the-field interviews, tool introductions, comics, and science activities! Our magazine is available in English, Spanish, and Chinese currently, but we are always translating for new languages and writing new issues—find out what's new at our website [www.gearboxgirls.weebly.com](http://www.gearboxgirls.weebly.com).



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

**Pre-register & day-of sign in.** As on page 11, we include QR codes on our flyers to allow girls to pre-register for the event and possibly win a prize. Not only does it help to remind the girls to attend, but it also helps us collect really interesting data. This is what our sign in survey looks like.

## GGT Survey Sign-in

Description

\* Required

Name \*

Your answer

Team Number? \*

Your answer

Grade? \*

Your answer

What state are you from?

Your answer

If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

**After-event survey.** Alongside our opening surveys, we like to close the event with a survey to collect feedback on how we could improve. This is what our after-event survey looks like.

The image displays a wireframe of an after-event survey, organized into two columns of questions. Each question is followed by radio button options for selection.

**Left Column Questions:**

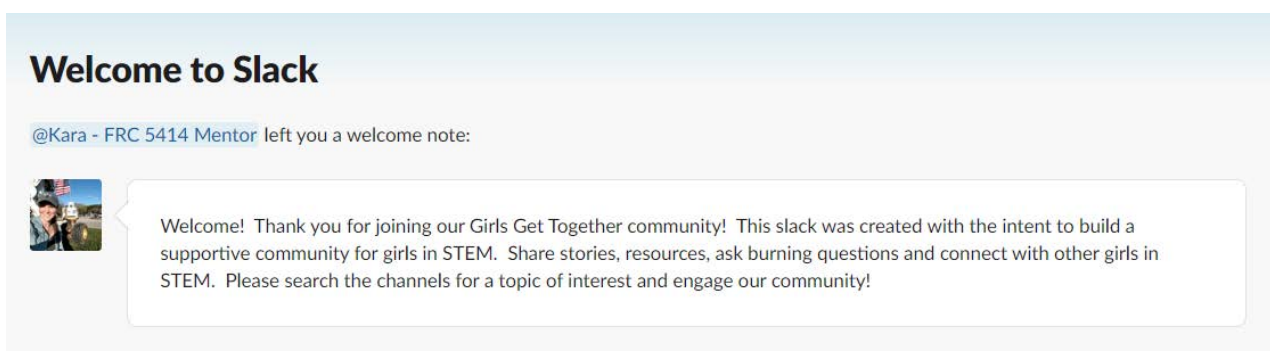
- How likely are you to attend another Girls Get Together Event?
  - Very likely
  - Likely
  - Neutral
  - Unlikely
  - Very Unlikely
- How did you hear about Girls Get Together?
  - Social Media
  - Flyer
  - Someone came to my pit and told me about it
  - Other: \_\_\_\_\_
- Do you plan to major in a STEM field or pursue a STEM career?
  - Yes
  - No
- To what extent did the Girls Get Together affect your confidence in pursuing a STEM major or entering a STEM related field?
  - A lot
  - Somewhat
  - A little
  - Not at all

**Right Column Questions:**

- How likely are you to attend another Girls Get Together Event?
  - Very likely
  - Likely
  - Neutral
  - Unlikely
  - Very Unlikely
- How did you hear about Girls Get Together?
  - Social Media
  - Flyer
  - Someone came to my pit and told me about it
  - Other: \_\_\_\_\_
- Do you plan to major in a STEM field or pursue a STEM career?
  - Yes
  - No
- To what extent did the Girls Get Together affect your confidence in pursuing a STEM major or entering a STEM related field?
  - A lot
  - Somewhat
  - A little
  - Not at all

If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!

**Girls Get Together Slack Workplace.** We created a Slack solely for the Girls Get Together community. Our goal is to start and maintain a wide network of girls, with the purpose of spreading the Girls Get Together, giving advice on topics from college to thriving as a woman in STEM, and providing methods and discussion on how to better represent this community in your own teams. We encourage you to invite interested girls, FRC mentors, and women in industry at your GGT event! On Slack, we can keep the conversation going. Building a strong community on the Slack also makes it much easier to advertise for the event at your competition! To be invited, they need to submit their email at: [gearboxgirls.weebly.com/girls-get-together](http://gearboxgirls.weebly.com/girls-get-together).



If you are interested in using this resource, feel free to contact team 5414 Pearadox—we are happy to share!



## COST BREAKDOWN

CATERED DINNER \$400

STANDING BANNER: \$107

TABLET FOR SURVEY: \$150

GIVE-AWAYS: \$80

MAXIMUM COST: \$737

## CUTTING COSTS

We understand this amount is a lot to put down for your first time running the event, so don't sweat it! Through lots of experience we have been able to determine what the most necessary materials are and much cheaper replacements to help cut costs, down to only \$40!

- We like to serve dinner or a meal at our Girls Get Togethers as a way to attract more attendees and thank our volunteers, so we encourage you to contact some sponsors or local food businesses before giving up on the idea. If necessary, having simple snacks at different tables would be cheaper and even encourage the girls to cycle around to different groups. Estimated cut to ~ \$40
- We use our standing banner as a way to advertise and direct attendees to the event, and if your event is at a hard to find location, placing the banner and a team member at an easy checkpoint would help people not get lost. To substitute, simple printed flyers would work fine. Cut to - \$0
- We use a cheap tablet to conduct feedback surveys/sign-ins at our events, and it helps a lot with data collection. However there's nothing wrong with using printed surveys and sign ins! Cut to - \$0
- Give-aways are another way we get more attendance at the event— an example would be giving that year's GGT shirt for free to the first 20 people who attend. Although they're not necessary, it does help girls get excited about attending. Cut to - \$0

## INVITING GUESTS

One of the things that makes Girls Get Togethers so special are the amazing women in STEM guests/volunteers who attend. The whole purpose of the event is to get FIRST girls in connection and contact with female mentors, and the best way to do that is to create genuine conversations and relationships! Instead of having presentations and scripts, our guests choose the table with a conversation starter they feel comfortable with talking about (see page 7 for clarification on our conversation starters) and lead a discussion with girls who join that topic table as well. This generates a much lower-pressure environment that involves inclusion from all parties.

To start, the easiest guests to invite are your own team mentors! We included a sample guest list on the next page (from a 2019 program, page 17), where the three female Pearadox mentors that come to our events are listed. Inviting any enthusiastic FRC mentor to be a guest is also a great idea! A majority of the time, we reach out to co-workers, family, friends, or all of the above. This would also be a great opportunity for your team to grow a relationship with a sponsor and invite some of their female employees. This is often the reason why we focus our GGTs around local competitions—it's much easier to find guests. (On average we have 3-7 guests attend).

Think back to the site planning section (page 4). We mentioned that it's important to keep your guests in mind when picking an event time! Especially for Fridays, try to pick a time at least after 5 p.m. (it's easier for the girls to attend then too!).



# Guests

## Kara Boyer

**Company:** Pinnacle Art

**Position:** Mechanical Integrity Engineering Specialist

**College:** Lamar University

**College Major:** Mechanical Engineering

**Favorite thing about my job:** I get to have an impact on the whole oil and gas industry and help companies become more reliable.

## Laura Hood

**Company:** Retired from NASA

**Position:** Performed system tests and integration for the Orion end to end communication system

**College:** University of Houston

**College Major:** BSEE, Masters in Electrical Engineering

**Favorite thing about my job:** Finding issues during tests and getting them resolved to allow for successful flight.

## Becca Nothof

**Company:** Shell Deer Park Refining

**Position:** Civil Engineer

**College:** University of Illinois at Urbana-Champaign

**College Major:** Civil Engineering (construction management)

**Favorite thing about my job:** The autonomy. One day I could be modeling storm scenarios to determine flooding risk, the next I could be field inspecting pipe racks, and another day I might be designing repairs! My job provides me with the freedom to do many different things in a manner that works best for me and my skill set.

## PEARADOX SUPPORT

Our team is really grateful to other teams who want to continue this initiative, and we want to help as much as possible! If your team attends the same competition as Pearadox (5414) we would love to collaborate for a GGT or help provide resources your team can't. We will also be happy to help your team advertise for the event on our social media/at a competition we are attending. If you need clarification on anything we described, have questions about the GGT, or need help running the event, feel free to email us at [pearlandfrc@gmail.com](mailto:pearlandfrc@gmail.com).



Pearadox

— Robotics Team 5414 —

# At Competition

## ADVERTISING & GATHERING YOUR AUDIENCE

So you understand the importance of the Girls Get Together, planned and prepped your heart away, and now it's competition—the only thing missing is the girls! Advertising for the event is one of the most important parts, and through all of our experimentation, we find that you truly get out what you put in. Some of the easiest times to talk to girls from other teams is actually during pit setup/load-in on the day before competition starts. We also post our flyers on this day. Members of our team take turns visiting every pit and talking about the GGT while inviting them to the event, this, we found, is the most engaging way to invite girls. One of our strategies is posting our students with our banner while the event is running to catch girls (pictured on the right). If you are on the Girls Get Together Slack (see page 14) you can send a message that you are hosting a GGT.



# MATERIALS CHECKLIST

Here's a good checklist we created for you to look at while packing for competition and before the event.

- Advertisement posters/banners
- Flyers (advertisement and directional)
- Conversation starter posters
- Dry erase markers (for conv. posters)
- Give-away items (ex/ shirts)
- Event programs
- Thank you cards
- Tablet (for survey/sign in sheet)
- Paper sign in sheets and surveys
- STEM Savvy magazines (from 5414)
- Refreshments (if any)

## BLANK CHECK LIST BELOW

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NOTES

## DURING THE EVENT

During the event the FRC girls will be in small groups with 1 or 2 guests "running" each group. It is a good idea to have a team mentor/student circulating the tables frequently to be aware of issues such as disengaged girls (encourage circulating to a different group/topic) or guests who need help. Sometimes it is necessary to redirect conversation if the topic becomes unproductive—often times the best solution is encouraging the groups to cycle around to different groups and topics.

A big reason we hold the event over wide span of time is to be able to include as many girls as possible even through the rush of competition. To utilize this we usually have our students continue to advertise during at least the first half of the event.

Something we stress to our students is the need to get good media of our GGTs, because the pictures are often what persuades guests and students we invite to attend (and it's how we were able to give lots of visuals in the DIY GGT). If your team holds a GGT as well, we encourage you to do the same! We would really appreciate being able to see how GGTs spread, so if you have pictures we'd love to see them!

# After Competition

## FEEDBACK

Something important to remember about running any event is you need to get feedback from your audience. You want to get the perspective of the audience because an event you run yourself is hard to assess. We have two main methods of gathering data/feedback from attendees.

When girls come to join the event, we have them fill out our "day-of sign in" (page 12) which is a form on our tablet to gather information such as their team number, state/country, and grade. Additionally, they can pre-register for the event through the QR code on our flyer for a chance to win a free GGT shirt and to skip the sign in when they attend the event. These first forms allow us to collect statistics and data.

The second form we encourage our attendees to fill out is our "after-event survey" (page 13) where we ask lots of feedback related questions, such as how they heard of the event, if they enjoyed it, and if they would want to attend again. We generally have both guests and girls fill these out. This second form allows us to collect feedback and responses.

## CONTACTING PEARADOX

Pearadox and the Gearbox Girls wish the best of luck to your team in running the Girls Get Together! If you do end up running the event, please contact Pearadox so we can share data/feedback, collaborate, and exchange new ideas!



# TL;DR (TOO LONG; DIDN'T READ)

## I. GIRLS GET TOGETHER

- **Introduction**– Gearbox Girls are students on FRC team #5414 with the mission of showing girls they are creative, confident, and capable enough to be in STEM. We run Girls Get Together events at FRC competitions inviting women engineers to talk to the girls in robotics in a conversational, non-intimidating environment.
- **Need for Change**– FRC, being male-dominated in members and mentors, needs more female role models to help girls feel confident and comfortable. Testimony from our teams and others proves there is a problem that needs to be addressed, which is why GGT is necessary.
- **Team Culture**– The Girls Get Together positively affects FIRST, but also brings a more harmonious, diverse culture to your own team–making sure teams supportive environments to those who may not feel comfortable is one of our biggest goals.

## II. PREPARATIONS

- **Site Planning**– Finding a big enough, free space with separate tables is tricky. The best sites are at competition with room/table space for more or less 50+ people. Timing is important, and you need to think about what day of competition (we stay away from playoff days) and the time of day (towards evening is easier for guests and girls).
- **Resources**– Necessities for the event. Ex/ Shirts, Flyers, Banners.
- **Cost Breakdown & Cutting Costs**– a quick outline of the major costs of running the event, and ways to save money while retaining purpose.
- **Inviting Guests**– Your guests are who drive the event; we often have 1 guest per table (~6/7 girls) and they lead discussions with the girls (not a presentation environment). It's easiest to ask female mentors to be guests at the event, but we also like to invite co-workers, parents, or other interested women in STEM.
- **Pearadox Support**– If your team is interested in running a GGT, Pearadox would love to help in the event or provide our resources. Contact us at [pearlandfrc@gmail.com](mailto:pearlandfrc@gmail.com)!

## III. AT COMPETITION

- **Advertising & Gathering your Audience**– It's important to develop your advertising strategy over time depending on the quantity and capability of your students. The method we find works the best is face to face interactions, such as visiting teams in their pits and talking to students at lunch.
- **Materials Checklist**– This is a good checklist to check off things while packing before competition, and just before setting up the event at competition.
- **During the Event**– Try to encourage groups to circulate the tables/guests so they get to reach all the topics they're interested in. We also have our students getting media during the event and we'd love to see any media your teams gets.

## IV. AFTER COMPETITION

- **Feedback**– We have two methods for collecting data and feedback from our guests and attendees–a sign in to collect numbers, and a survey to collect feedback.
- **Contacting Pearadox**– Please contact us (Pearadox) so we can share ideas and learn about how to grow GGT together!

# Thanks for joining us!

*Let's stay in touch!*

Instagram: @gearboxgirls5414

Twitter: @FIRST\_GGT

Email: texasggt@gmail.com

Website: [www.gearboxgirls.weebly.com](http://www.gearboxgirls.weebly.com)

*Share your experience!*

*#diggt*

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Gearbox Girls

&



**Any ways we could improve the experience?**

**Let us know how we can make the event  
better for everyone!**