



**GeorgiaFIRST**  
*Building Robots ... Building Futures*



# **Robot Quick Build Session**

## **RQBS Intro - Instructions**

Produced by  
Mannie Lowe, Georgia FIRST

Special Thanks to

**Georgia Tech RoboJackets**

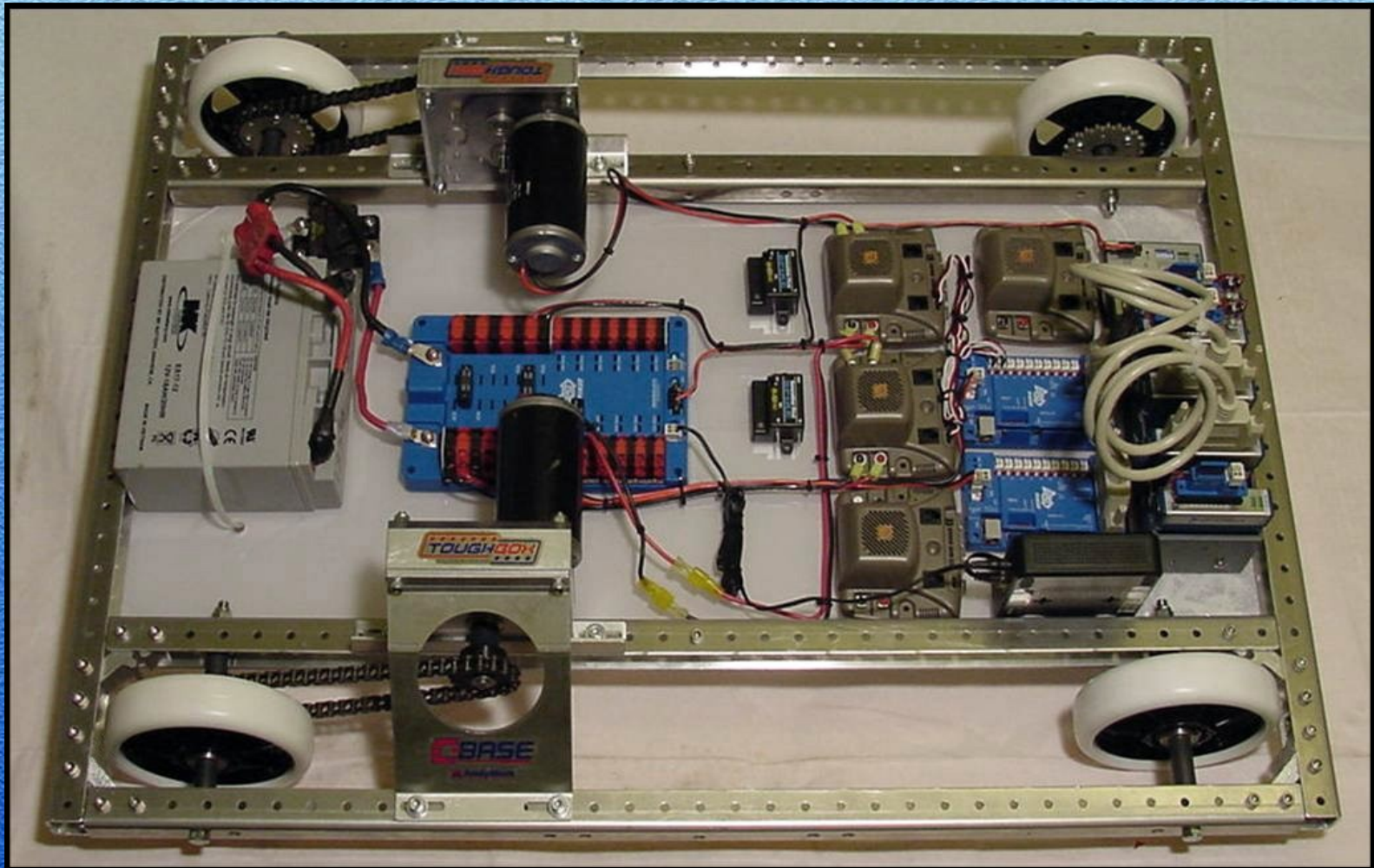
**Phillip Marks  
Jevawn Roberts**

**With appreciation to the Oklahoma RQBS**





# Finished Kitbot - This is the goal!\*\*



\*\* - our robot will not look exactly like this – but it will be close



# Getting Started

## Break into 2 sub-teams:

- Electronics/Programming (Phillip Marks – lead)
- Transmission/Frame (Jevawn Roberts – lead)

## Get parts and go to rooms

## Expected time:

- |           |                                       |
|-----------|---------------------------------------|
| 0:00-0:30 | Introduction, Pull parts from kit     |
| 0:30-2:00 | Electronics team assembly/Programming |
| 0:30-2:00 | Transmission & Frame assemblies       |
| 2:00-3:00 | Mount electronics board and test      |
| 3:00-4:00 | Run robot or troubleshoot; clean-up   |

**NOTE:** Getting the robot to run in wireless mode may be too challenging in a short amount of time. Pick a deadline – say, 3:00 hours – to give up on wireless for the day and proceed with tethered mode only.



# Rules

1. Wear safety glasses! Put them on now.
2. You are responsible for your own kit of parts.
3. Do not drill into any tables!
4. Start practicing 'Gracious Professionalism' today.



# The Plan

Get each team their parts and dismiss them in this order:

1. Electronics/Programming team
2. Transmission/Frame team



# Programming Team

Pull the software CD from the Control Systems box and go to the Electronics Room with your team's laptop.



# Electronics Team: Parts to Pull from Plastic Bins

Wire, 6AWG, Black      Wire, 6AWG, Red



Battery Charger



Quick-Disconnect  
Battery Connector



Tie wraps, 4" and 8"



Terminal bag



Terminal lugs:  
Both crimp and screw-type  
lugs for the thick 6 AWG  
battery wire are in the kit  
(no picture available)

Circuit Breaker





# Remainder of Electronics Team Parts

## Control System Box

(If you didn't already get yours ahead of time)

## Also take:

- 17"x37" electronics board
- 8"x24" driver station board
- 'Goody' bag, minus the 'sandwich bag' of various nuts/bolts (give that to the Frame Team)

1 Battery Box  
(separate box – not in bins)





# **Tools for the Electronics Team**

**Wire strippers**

**Wire cutters**

**Wire crimpers**

**Phillips screwdriver - #2**

**Flat Screwdriver**

**Supplied Wago flat screwdriver**

**3/8" combination wrench**

**10mm combination wrench**

**Tape measure**

**1/4" and 3/8" Drills**

**\* 7/16" combination wrench**

**\* Cordless drill**

**\* Return these 2 items to Frame Team as soon as the holes are drilled and the 1/4-20 bolt tightened in the electronics base plate.**

**Once the Electronics Team has all the parts and tools, go to the Electronics Room**



# Parts to Pull for the Transmission Assembly

**Frame Kit – Pull the parts boxed in red**



**All the other parts shown are for the Frame Team.**

**Parts to Pull from  
Plastic Bins**



**2 CIM Motors**



**2 Sprockets, 15-tooth**



# Parts to Pull for the Frame Assembly

- Remainder of the frame kit shown on the previous page
- Sandwich bag of items from the 'Goody' bag,

## Parts to Pull from Plastic Bins



2 Master links

Box of Chain  
(no picture available)

**Note: If the Transmission Assembly and Frame Assembly are to be done in the same room, start the Assembly PowerPoint presentation (and referenced video) for the Frame Team first.**



# Good luck

- Remember your Gracious Professionalism
  - Veterans: Help the rookie teams out
  - When you have finished your part of the assembly, see if you can help someone else
- Safety Glasses – ALWAYS!!!!
- Have fun, but no horsing around

## GO FIRST!



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# **Thank You!**

- **Georgia Tech RoboJackets**
  - **Phillip Marks**
  - **Jevawn Roberts**
  - **Stefan Posey**
  - **Aakash Gihwala**
  - **and many more**
- **Georgia FIRST**
  - **Connie Haynes, Regional Director**
  - **Jeremy Roberts, Ass't Regional Director**
  - **Rick Folea**
  - **Mannie Lowe**
  - **Ray Spurlin**
- **Georgia FRC Beta Team**