



# THUNDER ROBOTICS

HATTON/NORTHWOOD HIGH SCHOOLS

# FIRST Robotics in ND

Hatton/Northwood

West Fargo

Cando

Jamestown

Fargo

-soon to be more

During the year, Thunder Robotics does many things besides competition.....



# Serving prime rib at a robotic demonstration.



# Aneta Turkey BBQ



# Providing LEGOs to Haiti



# Presenting to Civic groups



# RRVC Determination Award





Help run a golf tournament dedicated to a mentor who passed away due to cancer. >>

# Assist in the Northwood Men's Club Coyote Challenge .



# Kids' tractor pulls.



# Giving presents to needy families.



# STEM days for kids



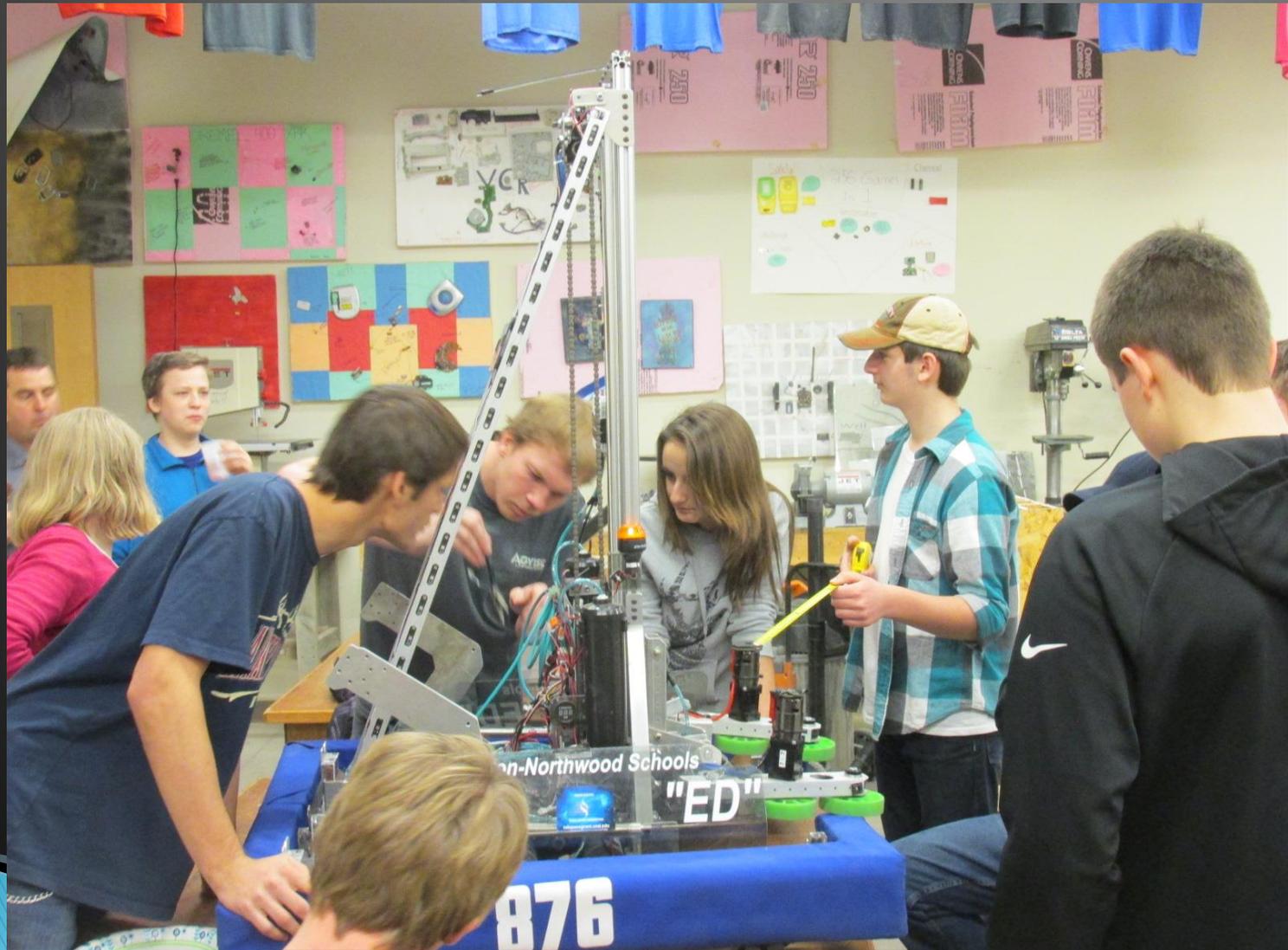
# Starting new teams

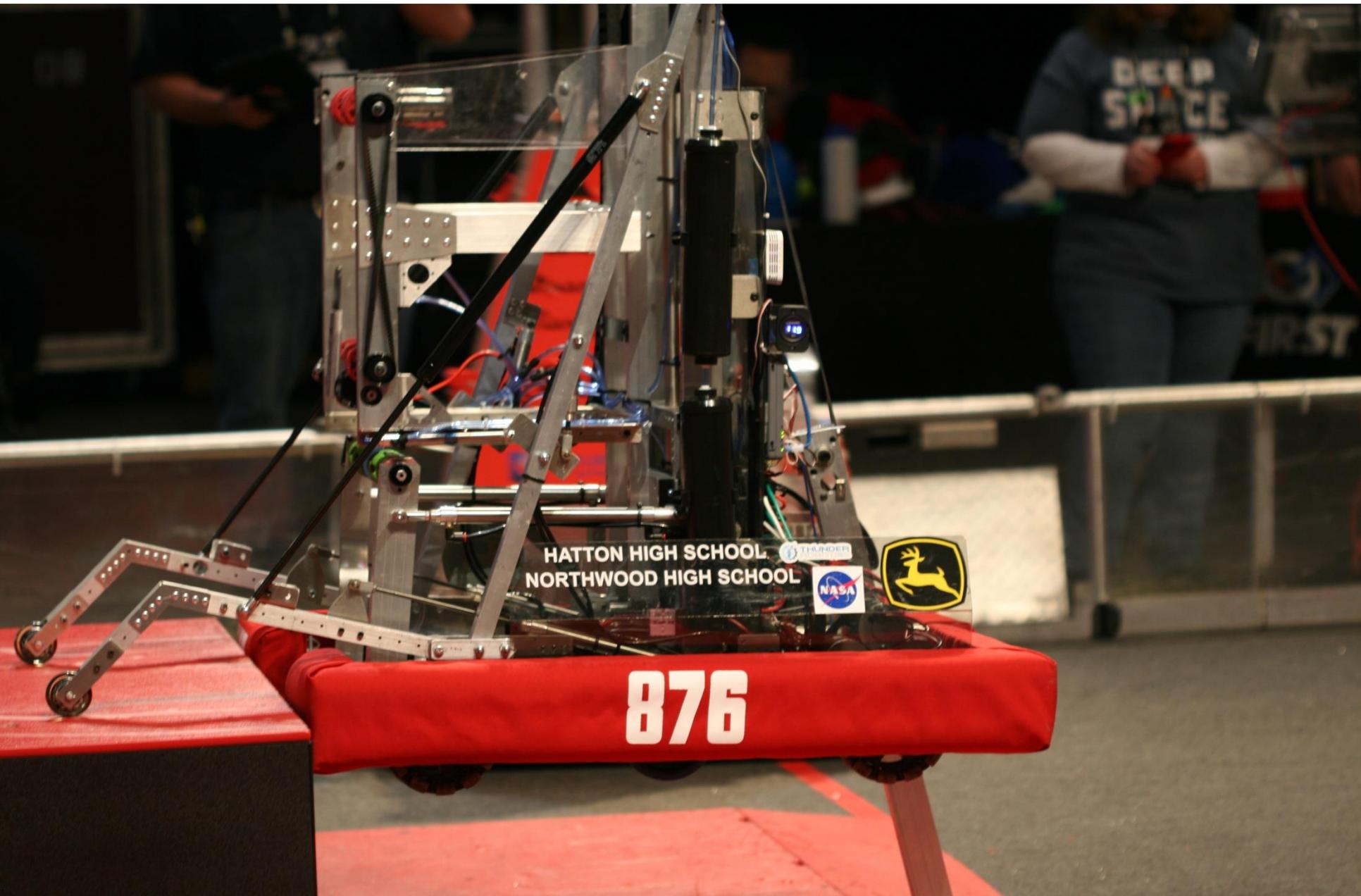


# Local parades



But our primary goal is the FIRST Robotics Competition.





HATTON HIGH SCHOOL  
NORTHWOOD HIGH SCHOOL



876

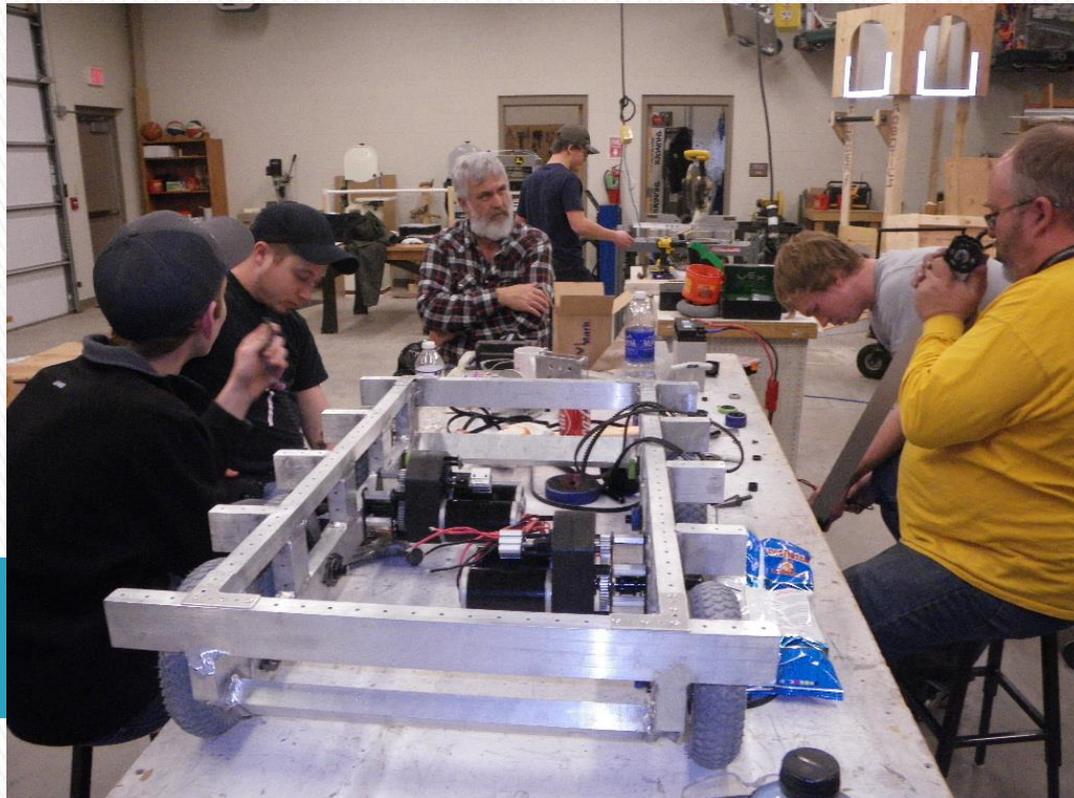
DESTINATION:  
**DEEP  
SPACE**

Presented By  **BOEING**

This year's game had a space traveling feel to it, escaping a sandstorm on another planet and loading cargo to survive.

- ▶ We had 6 weeks to design and build our robot

- ▶ The team wanted it to be quick, powerful and score in many ways



We met nearly every night and parents brought the team meals



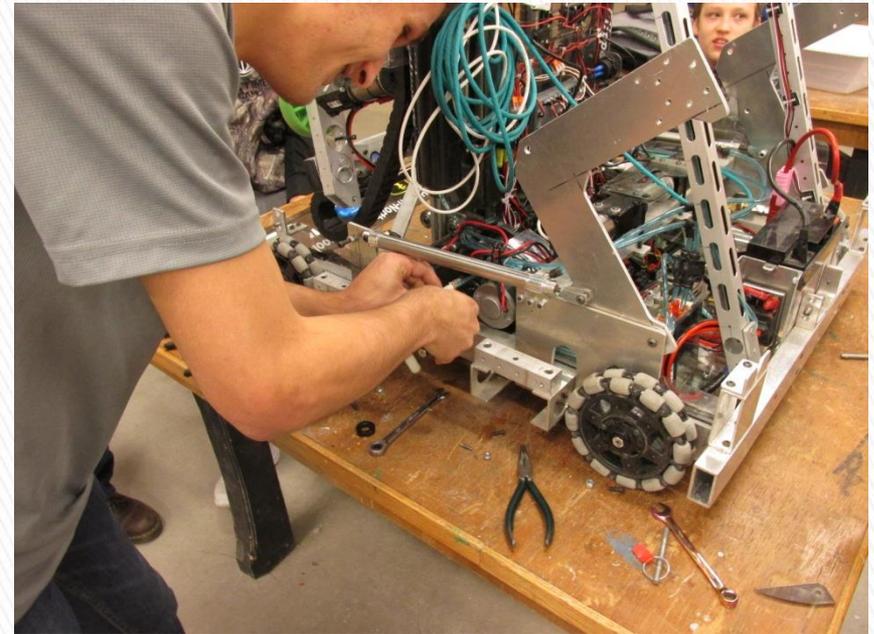


Over 3800 teams from across the world got their game instructions at the same time in early January.

# It gradually took shape....and a name was given "Bob"

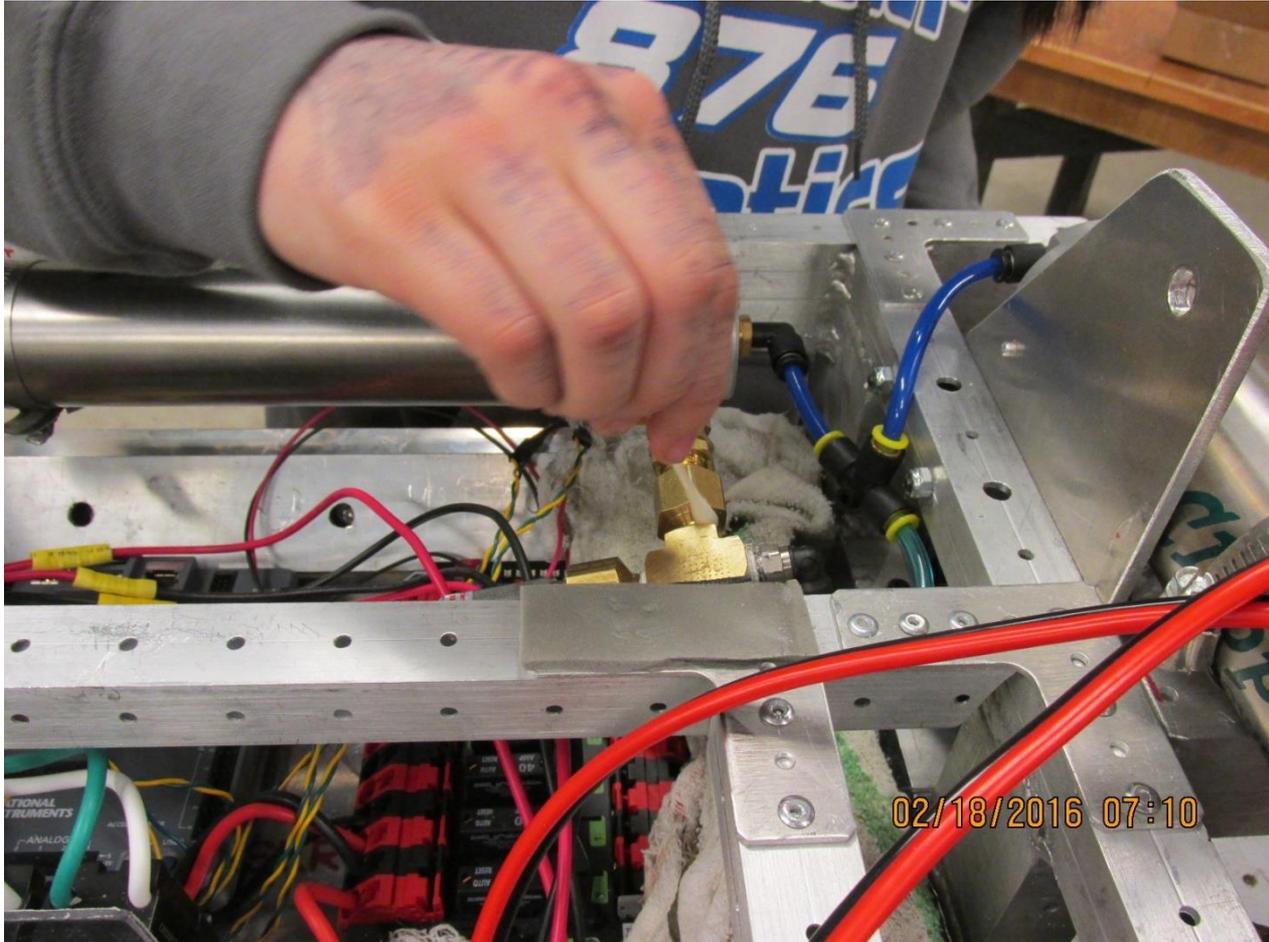


The early frame, 6 wheel drive



Installing 3 motors on each transmission.

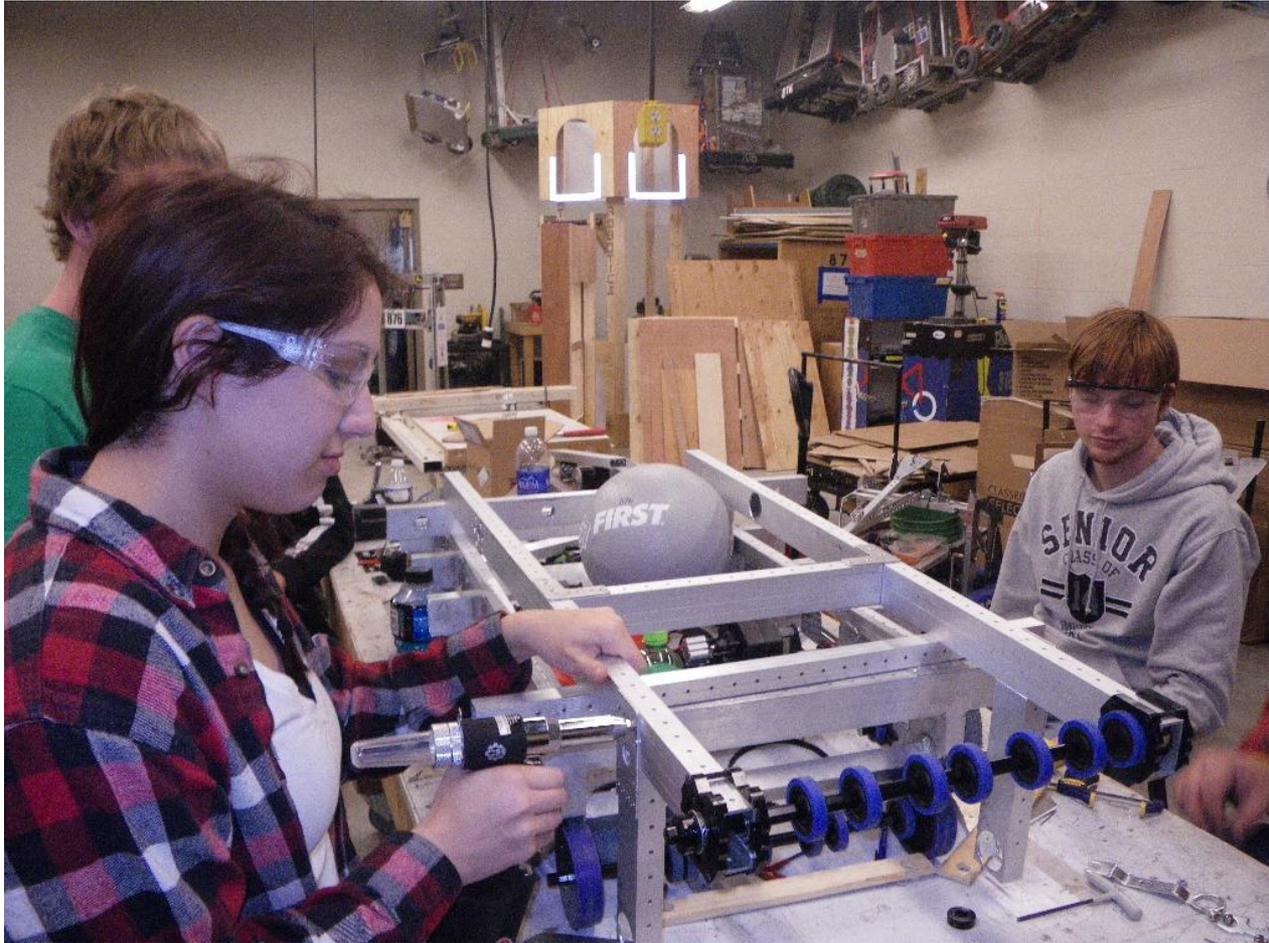
# Students learned many skills...electrical engineering....



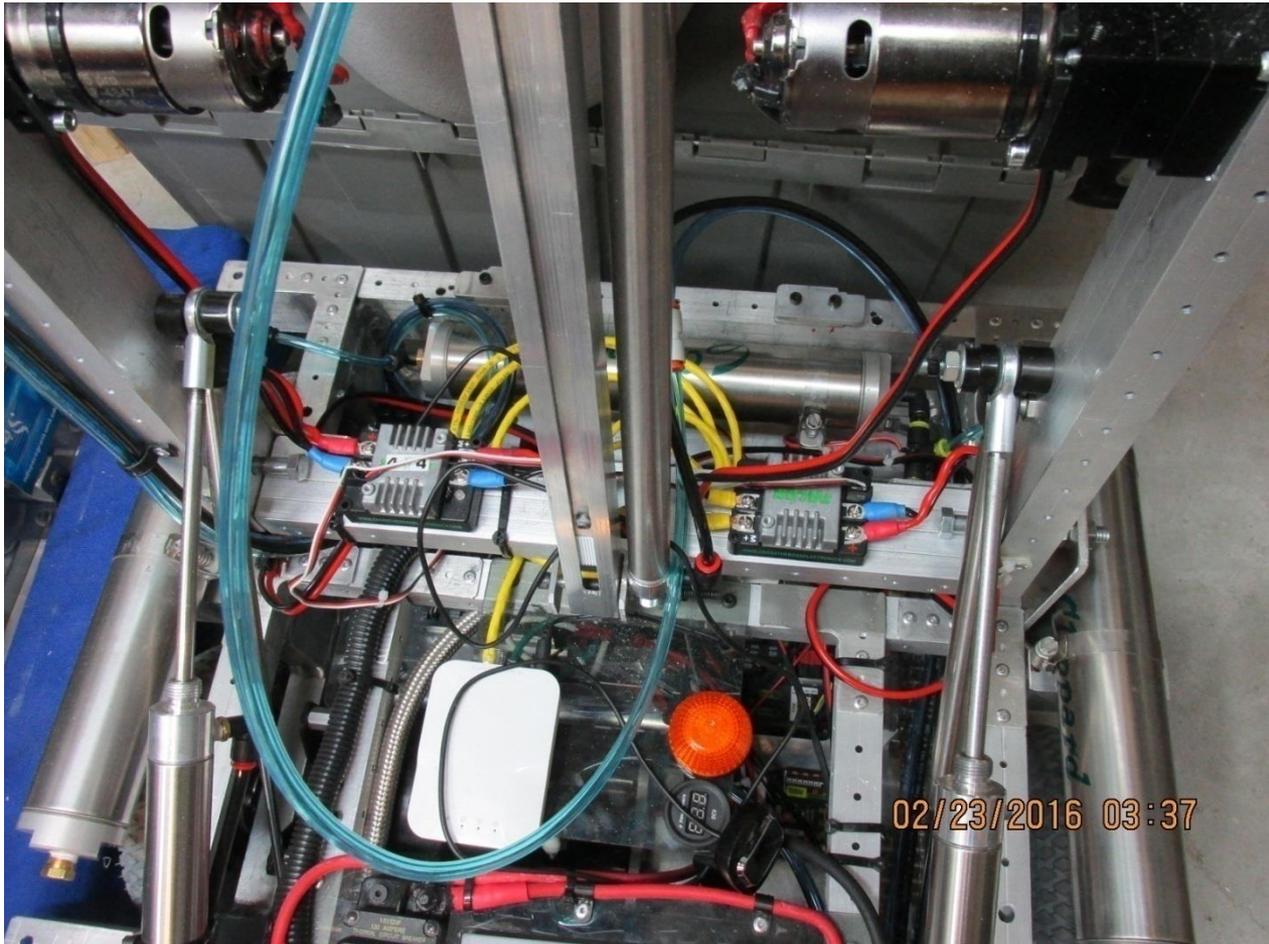
# Computer programming....



# Mechanical engineering....



# Pneumatic control...





# time deadlines....

- ▶
- ▶ **Projects this week.**
- ▶ -finish bumpers, bring in for inprinting 876
- ▶ -. Program . Get BB876 to do everything via JAVA.
- ▶ - Chairman's Award, the presenters work on their program . **Submission Feb 6**
- ▶ -have team members put Regionals, Hedland Golf, etc on their agendas or calendar.
- ▶ -students will finish their electronic registration.
- ▶ -finish Junk Rail cars
- ▶ -paint logo on Corn toss game boards.
- ▶ -driving "Ed" for practice. Main drivers will be working hard.
- ▶ -Organize the scouting crew.
- ▶ -Continue Work on Cargo and Panel grabber arms and elevator
- ▶ -stair climbing apparatus
- ▶ -start wiring plan for the robot
- ▶ -sponsor list for cabinet, look for banner.
- ▶ -sponsor decals,
- ▶ - work on mount camera for sighting.
- ▶ -plan robot trip, **Scrimmage in Nevis** on Feb 15-16
- ▶ -demonstration at Bismarck next Wed Feb 13 with "Ed"
- ▶ **Only 15 days left of build season!!**

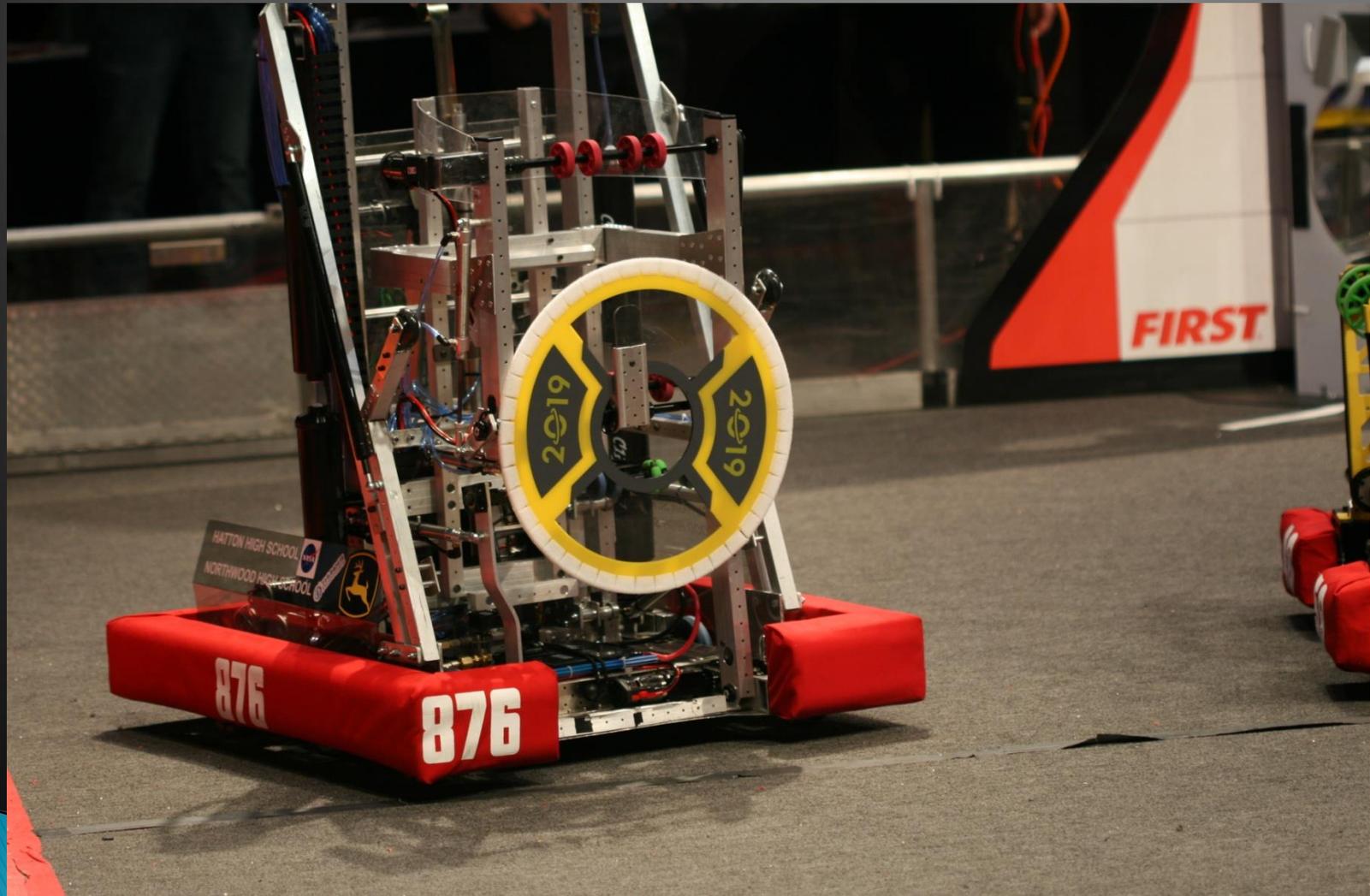
# And work together as a team.



**ND Space Grant funding allowed  
us to continue to compete at a  
high level**



# Northern Lights Regional in Duluth



# Thunder Robotics

876



TEAM  
876



TEAM  
7311

FIRST  
ROBOTICS  
COMPETITION  
WINNER  
2016  
CENTRAL ILLINOIS  
REGIONAL

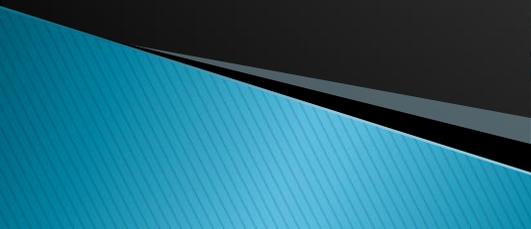
FIRST  
ROBOTICS  
COMPETITION  
WINNER  
2008  
BOILERMAKER  
REGIONAL

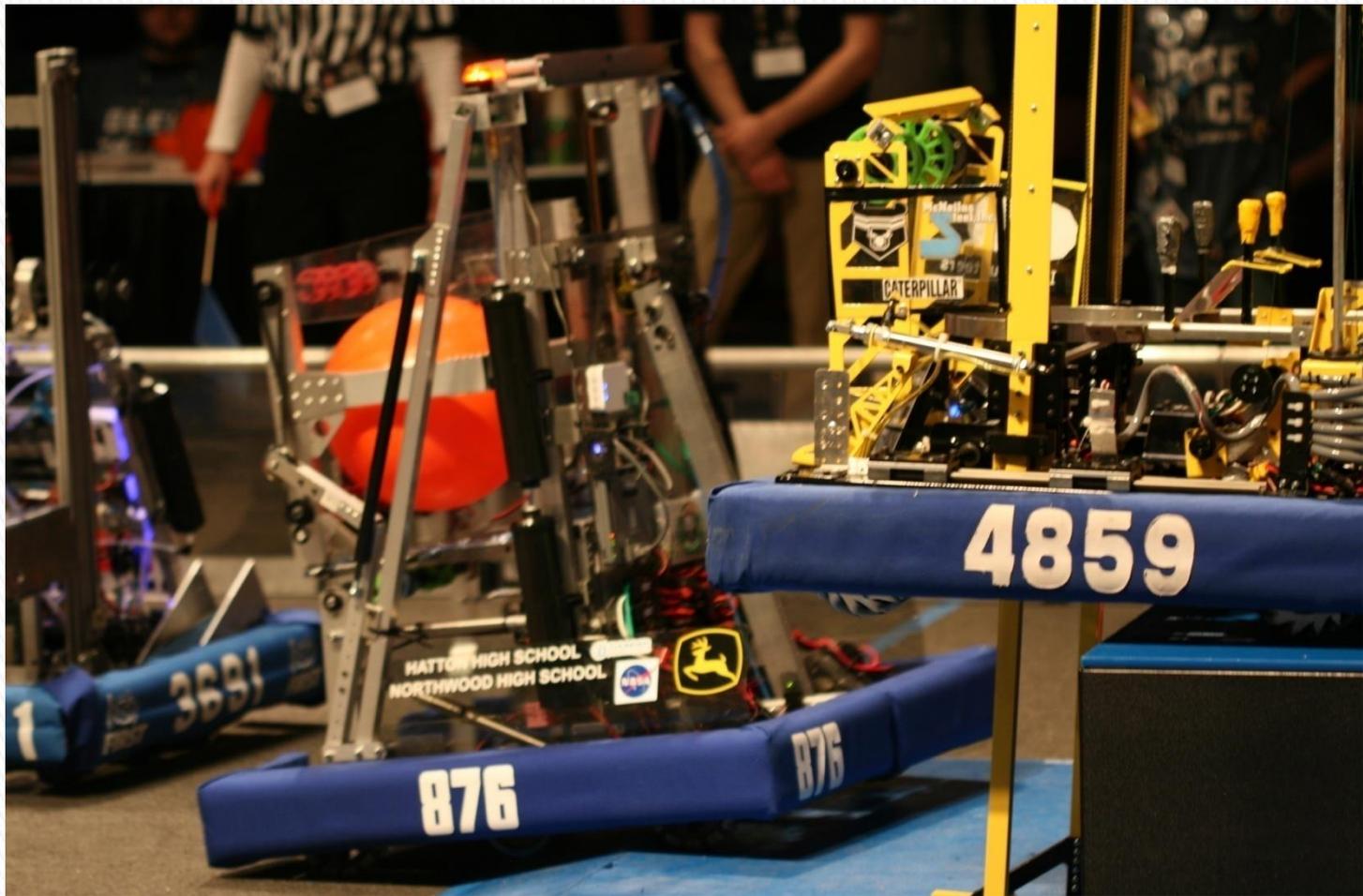
FRC  
FIRST Robotics Competition  
WINNER  
2011  
LAKE  
SUPERIOR  
REGIONAL

THUNDER

BLISSON  
PLAZA  
JOHN DEERE

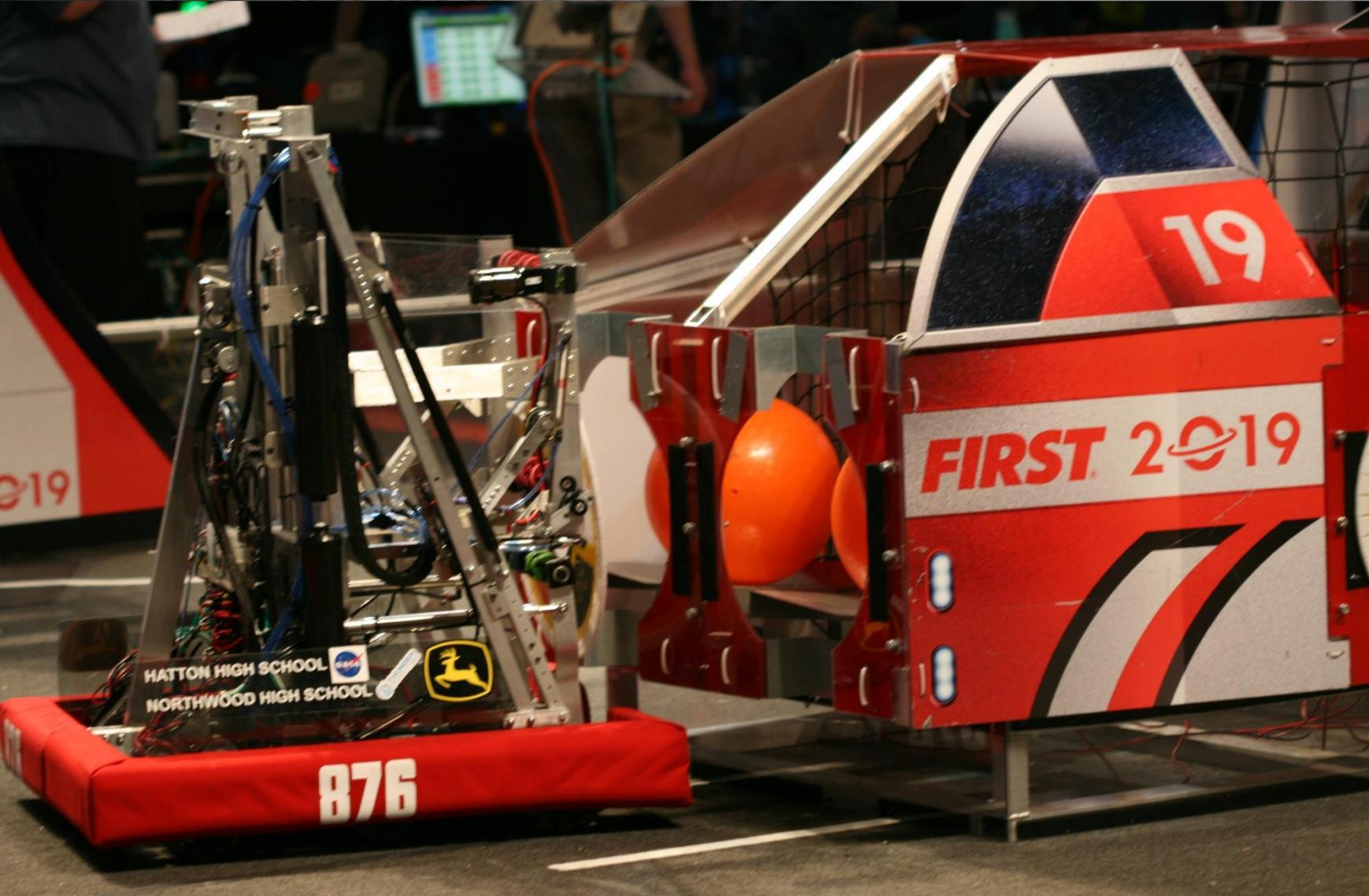
DEER  
SPACE





3 robots work together as an Alliance and compete against another Alliance.

# Bob could score



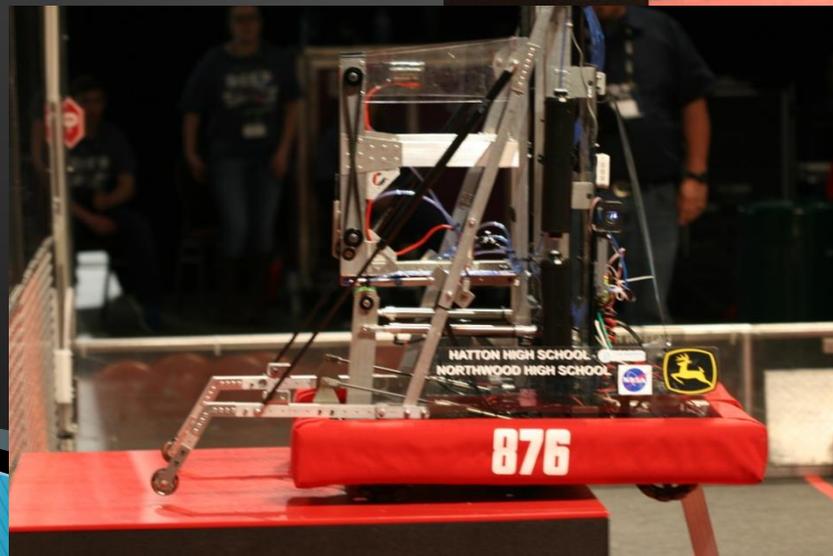
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NORTHWOOD HIGH SCHOOL

876

19

FIRST 2019

# And climb the 19" Habitat step for ranking points!!



Team 876 placed 3<sup>rd</sup> out of 60 teams !



**THUNDER**  
**ROBOTICS** 876

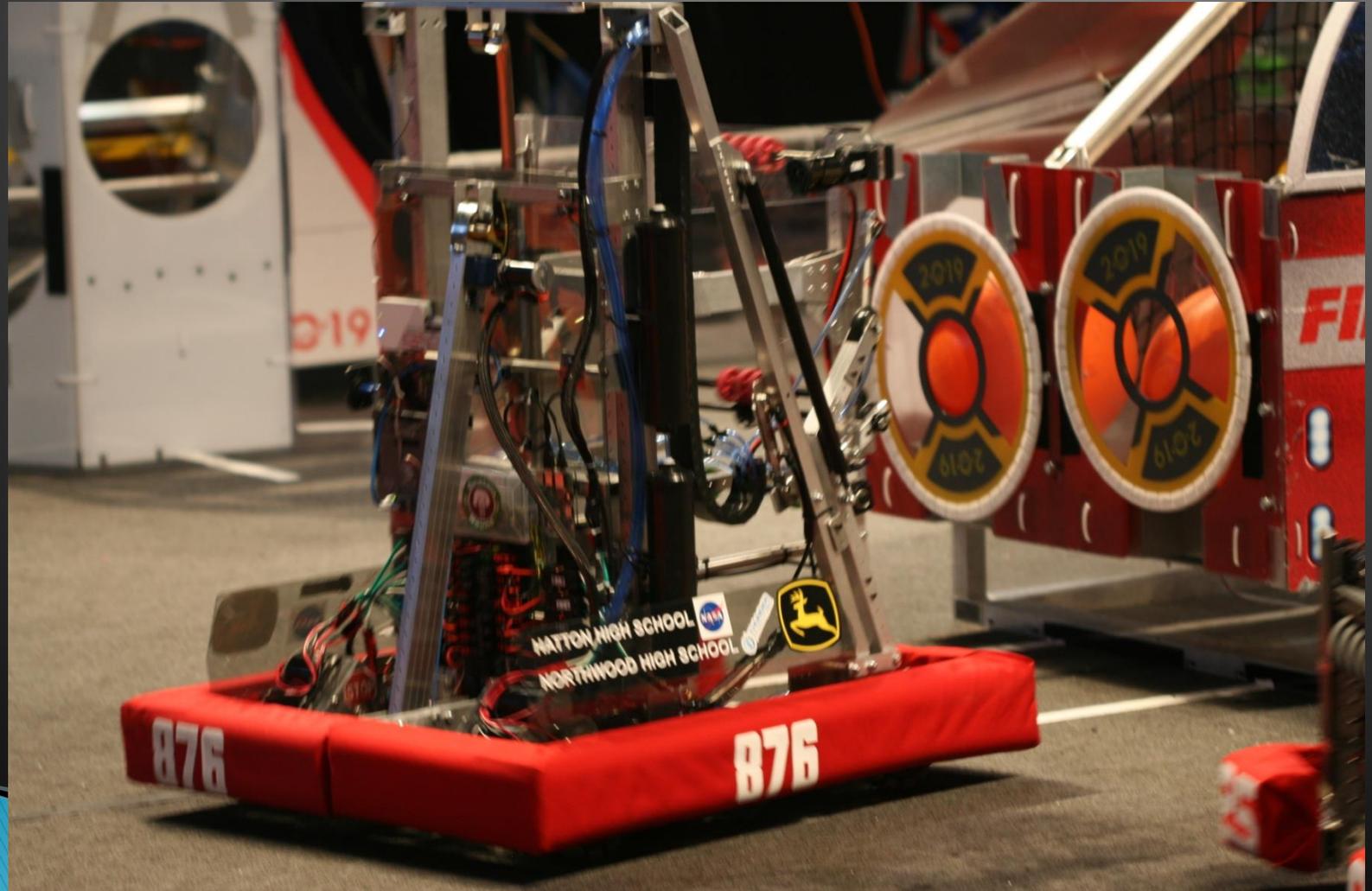
1 week later, we competed against  
54 teams from 5 states, Manitoba  
and China in Grand Forks, ND



The team overcame mechanical problems.....



And took 2nd place, getting a Wild Card invitation to the Championships!!



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BOEING



FIRST

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Our next stop is the World Championships in Detroit.



[https://www.youtube.com/watch?time\\_continue=173&v=hZ\\_BQJ-Tfaw](https://www.youtube.com/watch?time_continue=173&v=hZ_BQJ-Tfaw)