2022-2023 Team Description

Robot Casserole
FIRST Robotics Competition Team 1736

www.robotcasserole.org

Sponsored by:

CATERPILLAR

HOW TO USE THIS DOCUMENT

This handbook communicates general background on Robot Casserole as a team, and the FIRST Robotics Competition it participates in.

It serves as our team statement of purposes, and the outcomes we anticipate for those who spend time working with our team. If you are considering joining the team, we recommend you read it to understand what we are all about!

If you have any questions or concerns, please don't hesitate to reach out to us! Our email is frc1736@gmail.com .

Thank you again for considering Robot Casserole!

ROBOT CASSEROLE SPONSORSHIP

Robot Casserole is one of two original Caterpillar Inc. *FIRST* Robotics teams, open to all greater Peoria area high school students.

The people of Robot Casserole Robotics Team 1736 include:

- Employees from local companies and institutions
    - Caterpillar Inc.
    - Ameren
    - OSF
    - Kress Corporation
    - City of Peoria
    - District 150 Schools
- Numerous Volunteers and Retirees
- Students from many schools
    - Richwoods High School
    - Illinois Valley Central
    - Peoria Area Home Schools

In particular, Caterpillar Inc. provides ongoing support through:

- Work space for the team to conduct *FIRST* related activities
- Engineer/Professional mentoring
- Program Leadership
- Materials and supplies
- Financial support

This sponsorship is provided for a purpose: Robot Casserole is a key component in Caterpillar Inc.'s STEM Pipeline. We help fulfill the company's goals of teaching STEM concepts to the greater Peoria community.. We hope that students will consider Caterpillar Inc when searching for future employment opportunities.

ROBOT CASSEROLE'S MISSION

As FIRST Team 1736 Robot Casserole, our mission is to inspire and foster students' natural curiosities and ingenuity on a technical challenge within real-life constraints that promotes the development of leadership, teamwork, problem-solving, technical, creative, software, and communication skills. We wish to be a prominent and visible force within our community that encourages Gracious Professionalism, cooperation, volunteerism, and hands-on STEM-based learning.

ROBOT CASSEROLE'S TEAM GOALS

- Inspire students to explore, experience, and appreciate technology, math, science, and engineering through hands-on participation in team activities
- Prepare students for leadership roles through shared decision making on the team
- Promote the ideals of FIRST in all that we do
- Increase community awareness of engineering education opportunities
- Promote teamwork skills
- Promote cooperation and volunteering
- Introduce students to positive role models
- Compete annually for the Chairman's Award (the highest award within FIRST)

FIRST OVERVIEW

WHAT IS FIRST?: FIRST (For Inspiration and Recognition of Science and Technology) is a non- profit organization that was founded to inspire and excite young people about science and technology by bringing together professional mentors with high school students from around the U.S. and several foreign countries.

HOW IT WORKS: Through a large, successful and growing community of educators, parents, community leaders, engineers, volunteers, and sponsors, FIRST builds alliances to support its vision. A part of that vision is to inspire and prepare the future talent pool, workforce, and leaders to become capable, technically-literate citizens of tomorrow. FIRST designs accessible, innovative programs that build self-confidence, knowledge and life skills while motivating young people to pursue opportunities in science, technology and engineering.

ROBOT CASSEROLE TEAM HISTORY

2006 – Chicago Regional: Xerox Creativity Award
2007 – Wisconsin Regional: GM Industrial Design Award, Semi-Finalist
2008 – Wisconsin Regional: Judges Award
2009 – Wisconsin Regional: Chrysler Team Spirit Award
2010 – Wisconsin Regional: Chrysler Team Spirit Award
2011 – Wisconsin Regional: Chrysler Team Spirit Award
2012 – Wisconsin Regional: Imagery Award
2013 – Boilermaker Regional: Chrysler Team Spirit Award & Industrial Safety Award
2014 – Central Illinois Regional: Chrysler Team Spirit Award
Wisconsin Regional: Chrysler Team Spirit Award
2015 – Midwest Regional: Chrysler Team Spirit Award
2016 – Central Illinois Regional: Finalist & Imagery Award
Midwest Regional: Winner
World Championship: Imagery Award (Hopper Division)
2017 – Midwest Regional: Imagery Award
2018 – Central Illinois Regional: Imagery Award
Seven Rivers Regional: Winner & Imagery Award
Detroit World Championship: Quarterfinalists (Carson Division)
2019 - Midwest Regional: Imagery Award & Woodie Flowers Finalist Award
Central Illinois Regional: Spirit Award
2020 - Miami Valley Regional: Innovation in Controls Award
Central Illinois Regional: Woodie Flowers Finalist Award
2021 - Infinite Recharge @ Home Challenges - Industrial Design Award
2022 - Central Illinois Regional: Quality Award
St. Louis Regional: Entrepreneurship Award

SUBTEAMS & COMMITTEES

Sub-Teams

- **CONTROLS:** Designs and develops all software and electrical systems which move the robot on the field under both driver control and autonomous operation.
- **MECHANICAL:** Design and construct all mechanical aspects of the robot, including design using CAD/CAM software.
- **BUSINESS:** Manages sponsor relations, team communications, award submissions, and branding and imagery.

Committees

- **SAFETY**
  Manage safe operation procedures for tools, incident reporting, and developing a culture on the team which ensures we operate safely every day.
- **OUTREACH**
  Coordinate community relations events and document team outreach through photos and videos. Recruit new students through demos and interactive presentations.
- **SPONSORSHIP**
  Maintain relationships with existing sponsors through telling the story of how their investment benefits both their company and the greater Peoria area. Recruit new sponsors to help expand Casserole's mission.
- **COMPETITION AWARDS**
  Assist with team identity and imagery. Design and develop peer awards. Design, develop and organize the competition pit.
- **ESSAY AWARDS**
  Design and write essay-based submitted awards.
- **SCOUTING**
  Design winning match strategies in real-time during competition, through tracking data from other robot's performances on the field.

Other Committees will be formed during the season as needed!

JOINING THE TEAM

New Students: keep an eye out on the website, calendar, and social media for information about our fall Open House. Drop by our warehouse during the open house to see what we're all about, and submit an application to join the team. Students will be notified of being accepted to the team shortly after the open house.

SEASON OVERVIEW

Our team follows a basic structure for a full season:

- Offseason Prep
  - Returning Students Only
  - 1-2 weeks in September
  - Cleaning and organization of the warehouse in prep for open house
- Open House
  - 1 week in September
  - High School students get to see what we're all about, and express interest in joining the team.
- Offseason Training
  - 6-8 weeks in the Fall
  - Students are on-boarded and trained in using the team's tools and design techniques
- Winter Break
  - Between Thanksgiving and New-Year's
- Season Prep
  - 1 week prior to Kickoff
  - Organization and prep for the build season
- Kickoff
  - Early January
  - FIRST releases new game for the year
- Build Season
  - January - March
  - Team designs and constructs a robot
- Competition Season
  - March-April
  - Team brings the robot to competitions to compete
- End of Year Celebration
  - May
  - Team celebrates all they have accomplished this year
- Summer

    - Optional meetings, pending mentor/student availability
    - An opportunity to tackle lower-priority projects or build skills.
    - Possible offseason “scrimmage” competitions

TEAM MEETING STRUCTURE

In general, team meetings will follow a format:

- 5 min - organization, getting ready
- 10-15 min - Full-team meeting.
    - Discuss plans for the day
    - Give updates and summary from the previous meeting
- Subteam meeting and activities
- Dedicated cleanup time prior to end of meeting
- Last 5 minutes - full team wrap-up, announcements, and dismissal

STUDENT LEADERSHIP

Starting in the 2022 season, official student leadership positions will be established.

- Controls Team Lead
- Mechanical Team Lead
- Technical Team Lead

Mentors will nominate multiple students for each team lead position. Then, the student body will select the leaders by rank-choice voting.

Core leader responsibilities include:

- Run the start-up meeting for all regularly-scheduled team meetings
- Participate in a regular meeting with the mentor team
    - 2x/month during offseason, 1x/week during build season
- Work alongside mentor team to:
    - Establish team priorities
    - Divide tasks into manageable chunks, and distribute to students
    - Ensure each student has something to work on
    - Actively clear any roadblock a student has to getting work done
- Be a primary point of contact for raising student issues to the mentor group, if the student is not comfortable coming straight to the mentors

RETURNING STUDENT INTERVIEWS

Starting in the 2022 season, all returning students will participate in a 15-minute interview with the Administration Team. Students will sign up for time slots during the regularly-scheduled fall offseason meetings.

During the interview, discussion will occur around these topics:

- What are your main reasons for being on the team?
- What goals do you have specifically for this season?
- Do you feel you achieved your goals from last season?

Mentors will use this opportunity to give brief feedback to the student from their previous year. If desired, additional time can always be scheduled if the student wishes to discuss more.

PARENT VOLUNTEERING

Parent Volunteers: Participation during our build season will be greatly appreciated! We'll be reaching out during the season with more specifics. Some things we know we will need help with include:

- Organizing lunches during build season
- Snack/Food/Water donations for travel regional
- Coordinating "spirit-wear" orders
- Pulling equipment trailers and transporting students during travel regional
- Embroidering team hats

STUDENT OPPORTUNITIES

There are many rewards for being a committed Robot Casserole team member. Robot Casserole students have many ways to be involved with the team. They are encouraged to participate in community events, and during the fall they participate in the team events, training, and meetings.

Travel

• Historically, the team travels to one "away" regional. The location is usually somewhere in the Midwest - Chicago, Wisconsin, and Ohio have all been visited recently.

• Potentially, the team will travel to Houston TX for the championships

Scholarships

• There are MANY scholarships available for *FIRST* team members. Check out

http://www.firstinspires.org/scholarships for details.

• In 2020, there was $80 million in scholarships available to *FIRST* students.

Internships

• The experience students are exposed to opens doors for internships within Caterpillar and other high-tech companies. See your guidance counselor and www.caterpillar.com and select the “Careers” tab. Additionally, work with the mentor team in the **December** timeframe to understand what opportunities exist and get recommendation letters

Experience

• Many corporations across the nation are participating in *FIRST* and want to hire *FIRST* students. Being on a *FIRST* team will expose students to these corporations, provide them with opportunities to meet some of the mentors who work for these corporations, and help teach the students skills that these companies desire.

• Additionally, some colleges (Purdue, University of Illinois, etc.) offer college credit to engineering students who help mentor *FIRST* teams.

TEAM CONTACTS AND INFORMATION

- Robot Casserole General Team Email: frc1736@gmail.com
- Robot Casserole Website: http://www.robotcasserole.org/
- YouTube https://www.youtube.com/user/FRC1736
- Facebook https://www.facebook.com/FRCteam1736
- Twitter https://twitter.com/FRC1736
- Pinterest https://www.pinterest.com/frc1736business/
- Instagram https://www.instagram.com/frc1736/
- *FIRST* Website: http://www.firstinspires.org
- ILLINOIS *FIRST* Website: https://www.firstillinoisrobotics.org
- Caterpillar Coord. **Tim Koch:** Caterpillar_STEM@cat.com