

FIRST Robotics at IUPUI

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Outline

- Introduction
- Philosophy
- Competition
- Teams
- Sponsors
- Kick-off at IUPUI
- Questions

Introduction

- What is FIRST Robotics?
 - For Inspiration and Recognition of Science and Technology (FIRST)
 - For developing ways to inspire students in engineering and technology fields
 - Competitions
 - Grades K-3 (Junior FIRST LEGO League)
 - Grades 4-8 (FIRST LEGO League)
 - Grades 9-12 (FIRST Robotics Competition)
 - Grades 9-12 (FIRST Tech Challenge)



Founders (1989): Flowers and Kamen

Philosophy

- Definition of guiding principles

- A FIRST seeks to promote a philosophy of teamwork and collaboration among engineers and encourages competing teams to remain friendly, helping each other out when necessary. The terms frequently applied to this ethos are "gracious professionalism," and "Coopertition," the terms coined by Woodie Flowers which support respect towards one's competitors and integrity in one's actions.

- The Vision:

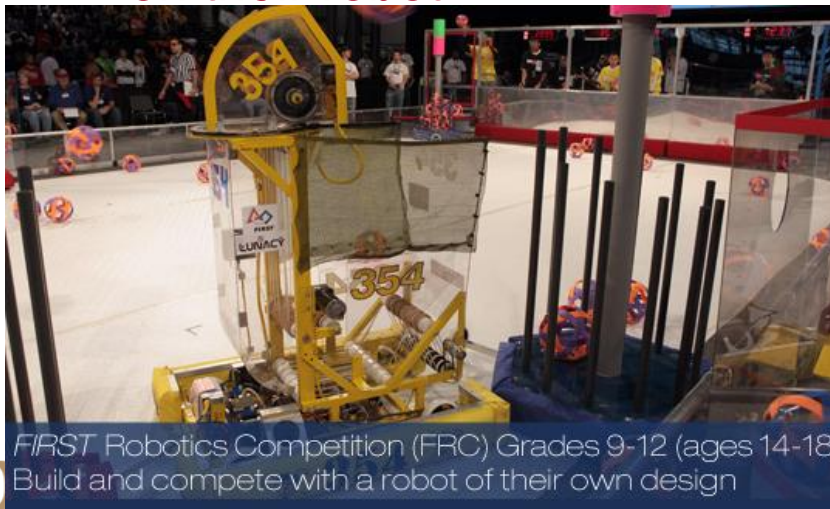
http://www.usfirst.org/VideoPlayer.aspx?video=1st_VISION.flv

- **FIRST Robotics Competition (FRC)**

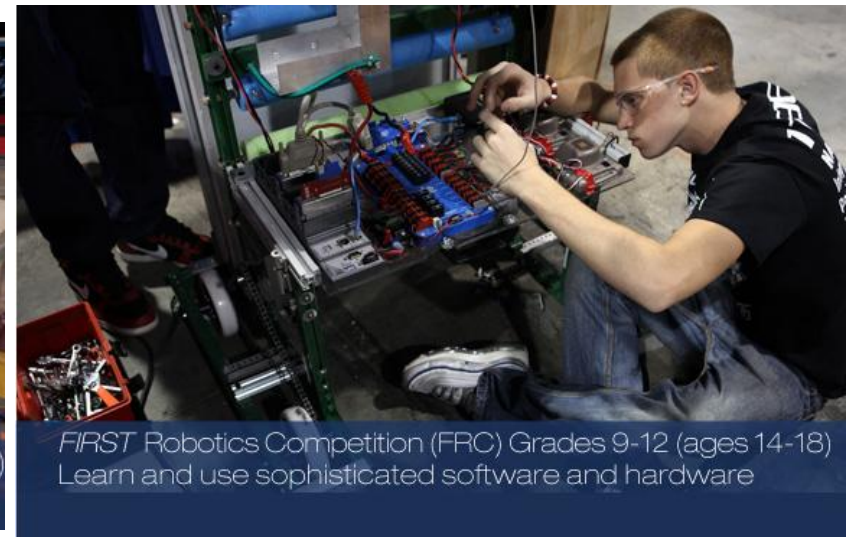
- The first program developed through FIRST was the **FIRST Robotics Competition (FRC)**, which is designed to inspire high school students to become engineers by giving them real world experience working with professional engineers to develop a robot.
- The inaugural FRC was held in 1992 with 28 teams in the Manchester Memorial High School gymnasium
- As of 2010, over 1,800 high school teams totaling over 45,000 students from Brazil, Canada, Israel, Mexico, the Netherlands, the United States, the United Kingdom, and more compete in the annual competition.

- **FIRST Robotics Competition (FRC)**

- The competition challenge changes each year, and the teams can only reuse certain components from previous years. The robots weigh around 120 lb (54 kg), depending on that year's rules
- The kit issued to each team contains a base set of parts. Registration and the kit of parts together cost about \$6000
- In addition to that, teams are allowed to spend another \$3500 on their robot.



FIRST Robotics Competition (FRC) Grades 9-12 (ages 14-18)
Build and compete with a robot of their own design



FIRST Robotics Competition (FRC) Grades 9-12 (ages 14-18)
Learn and use sophisticated software and hardware

- Working in Teams

- A FRC team typically has approximately 25 students, but can range anywhere from 10 to 100.
- Teams are also sponsored and aided by adult mentors, who can be professional engineers, teachers, parents, college students, or any other interested adults
- The degree to which the mentors are involved varies significantly from team to team.
- FIRST's recommended season stretches the full year, starting with recruiting and fundraising in September to December, robot construction and competition in January through April, then returning to fundraising and community involvement events until August

- Sponsors

- These are a few of the sponsors of FRC

- General Motors Corporation
 - Delphi Corporation, BAE Systems, Boston Scientific Corp.
 - The Chrysler Foundation
 - Rolls-Royce, Allison Transmission
 - Google, PTC, Autodesk, Xerox
 - The Coca-Cola Company
 - DEKA Research and Development Corporation
 - NASA, Johnson & Johnson, Abbott Laboratories
 - FedEx Corporation, Boeing, Motorola Foundation
 - Time Warner Cable
 - Universities across the nation

- *FIRST* sponsorship opportunities:
 - Provide financial support
 - Supply parts, equipment and/or facilities
 - Offer scholarships
 - Involve employees as mentors and/or volunteers
 - Provide internships

- *FIRST* sponsorship benefits:
 - Strengthens company reputation in the community
 - Builds a technologically literate work force
 - Creates a pipeline for interns and future employees
 - Provides rich employee volunteer opportunities
 - Provides renewed inspiration to company engineers and employees
 - Provides employee team building and training opportunities and increases positive feelings for employers

- Breakaway for 2010 season.
 - In the FRC “*Breakaway*” robotics game, two alliances of three teams will compete on a 27-by-54-foot field with bumps, attempting to earn points by collecting soccer balls in goals. Additional bonus points will be earned for each robot suspended in air and not touching the field at the end of the match.
- Breakaway game description and animation.
 - http://www.youtube.com/watch?v=Ex90Aw4PdAI&feature=player_embedded#.

• Kick-off at IUPUI

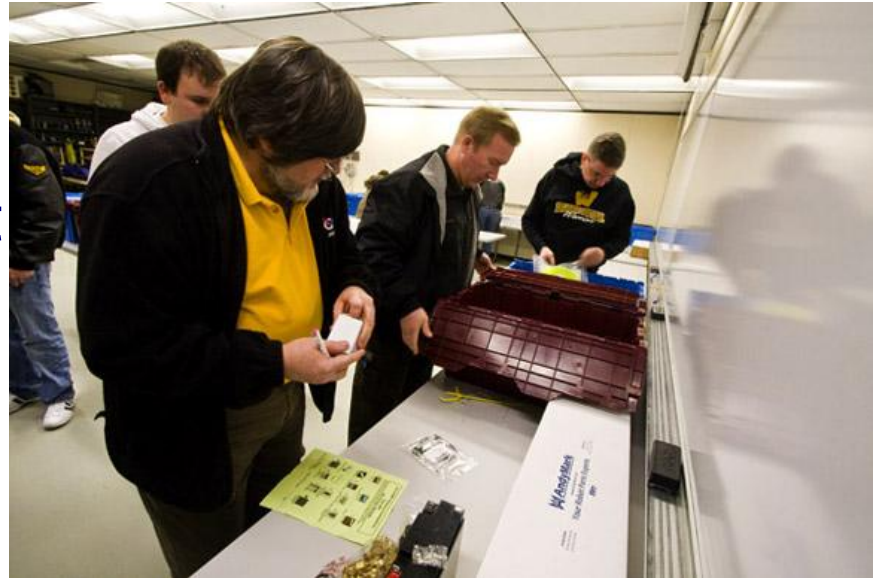
- 20 teams from 2 states participated, with over 350 in attendance.
- Many previous FIRST participants have joined IUPUI.



Kick-off at IUPUI

Robot Kits

- FRC Kick-off at IUPUI has been an E&T annual event since 2001



Questions?

- Acknowledgements

- Materials from FIRST Robotics Website.

- Comments...

- Questions.....??

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