

***FIRST* in Libraries: Inspiring STEM**

20 October 2015



WHO DO STUDENTS LOOK UP TO TODAY?



WHAT ARE THE MAJOR PROBLEMS FACING THE WORLD?



31,000

For Inspiration and Recognition of Science and Technology

- **SPORT FOR THE MIND**
 - The excitement of a sports competition
 - The smarts of a science fair
- **GRACIOUS PROFESSIONALISM**



Started in 1992 by Segway inventor and MIT professor



The *FIRST* Progression



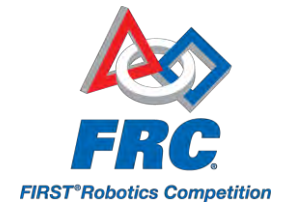
Ages 5-9
Up to 6
Students



Ages 9-16
Up to 10
Students



Ages 14-18
Up to 15
Students



Ages 14-18
Unlimited
Students



FIRST Core Values



- We are a team
- Gracious Professionalism®
- We are all winners
- We have fun

Why *FIRST*?

- **URGENT** need for **ENGINEERS**
- **TWICE** as likely to attend **UNIVERSITY**
- **10x** more likely to study **ICT/STEM**
- **3x** more likely to major in **ENGINEERING**
- **WOMEN** are **4x** more likely to pursue **SCIENCE / ENGINEERING** in University

FIRST LEGO League (FLL)

- 30K+ teams
- 90 countries
- 250,000 students world-wide

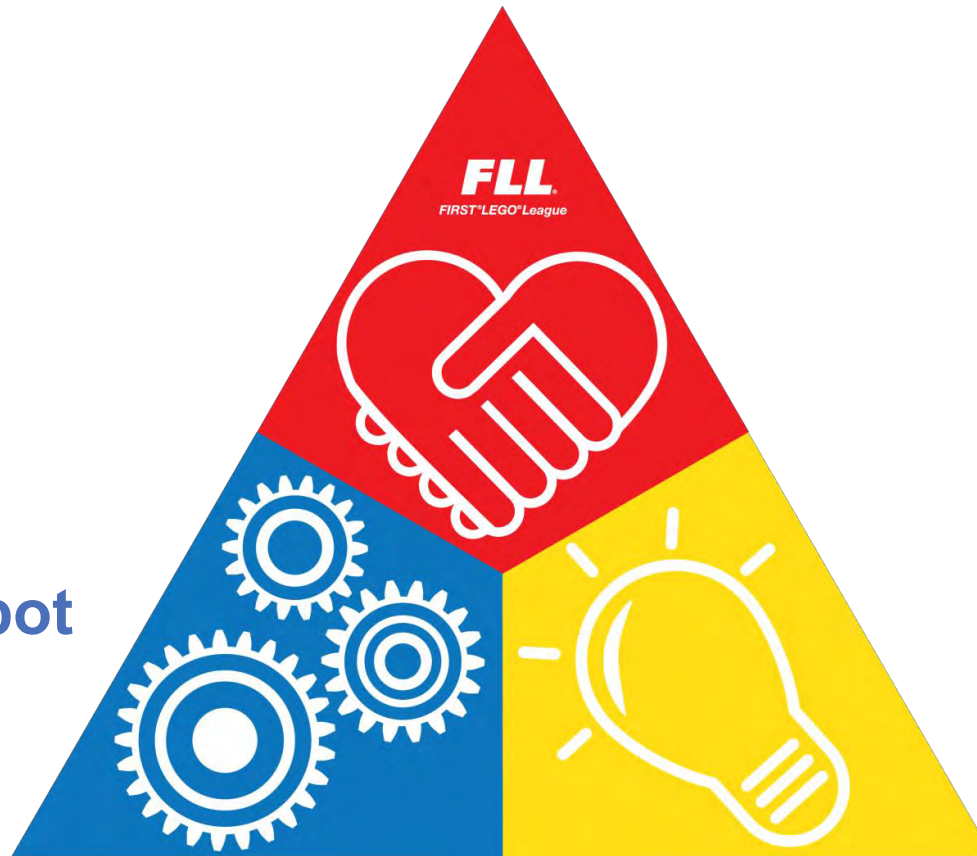
The FIRST® LEGO® League: HISTORY		
2010  Explore cutting-edge world of biomedical engineering 12,800 teams (projected)	2009  Transforming transportation 14,795 teams	2008  Study and research of the climate 15,765 teams
2007  Energy management and conservation 10,840 teams	2006  Science at the molecular level 8,847 teams	2005  Health, diversity, and productivity of the sea life's oceans 23,071 teams
2004  Address the needs of individuals with disabilities 5,659 teams	2003  Visit and explore the Red Planet 4,301 teams	2002  Challenges of urban planning 3,001 teams
2001  Impact of global climate change 1,002 teams	2000  Predict the timing and nature of volcanic eruptions 1,540 teams	1999  Visit the International Space Station 980 teams



What is FLL?

Core Values

LEGO Robot



Real-world
Research

- **RCX, NXT, EV3**
- **MINDSTORMS, NXT-G, EV3, RoboLab**
- **Motors, Sensors**
- **3 rounds, 2 ½ minutes**
- **Programming,
Mechanical Design,
Strategy & Innovation**



The Research Project

- **Real World Solutions to Real World Problems**
- **Innovative Solution, Presentation, Research**
- **Global Innovation Award**



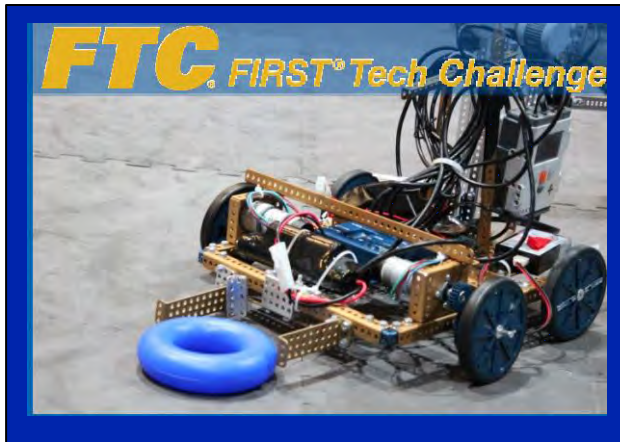
Core Values

- **Unknown problem to solve**
- **Time Management, Roles**
- **Inspiration, Teamwork, Gracious Professionalism**

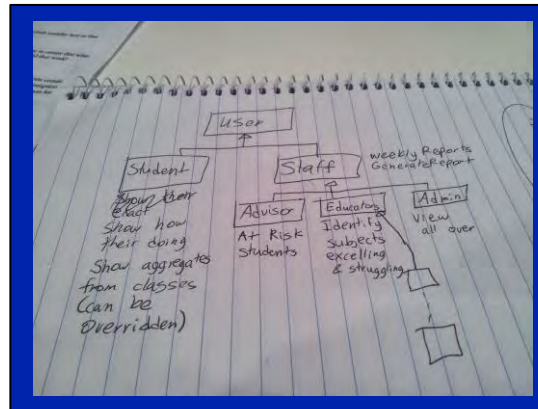


FIRST Tech Challenge (FTC)

Robot



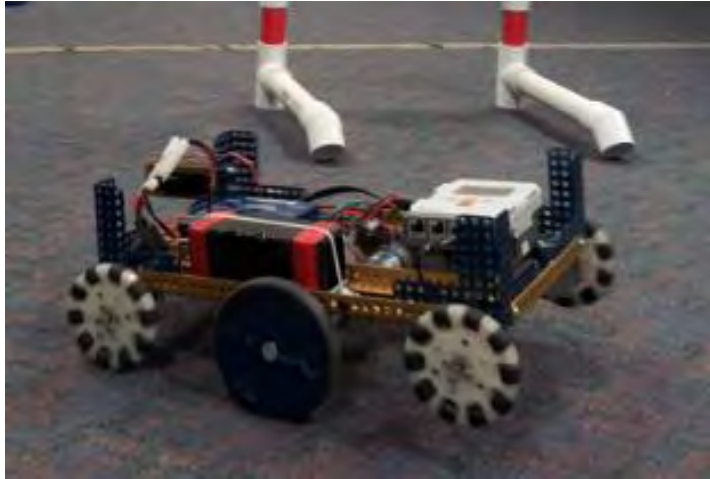
Engineering Notebook



Core Values (Teamwork, etc)



Ring It Up

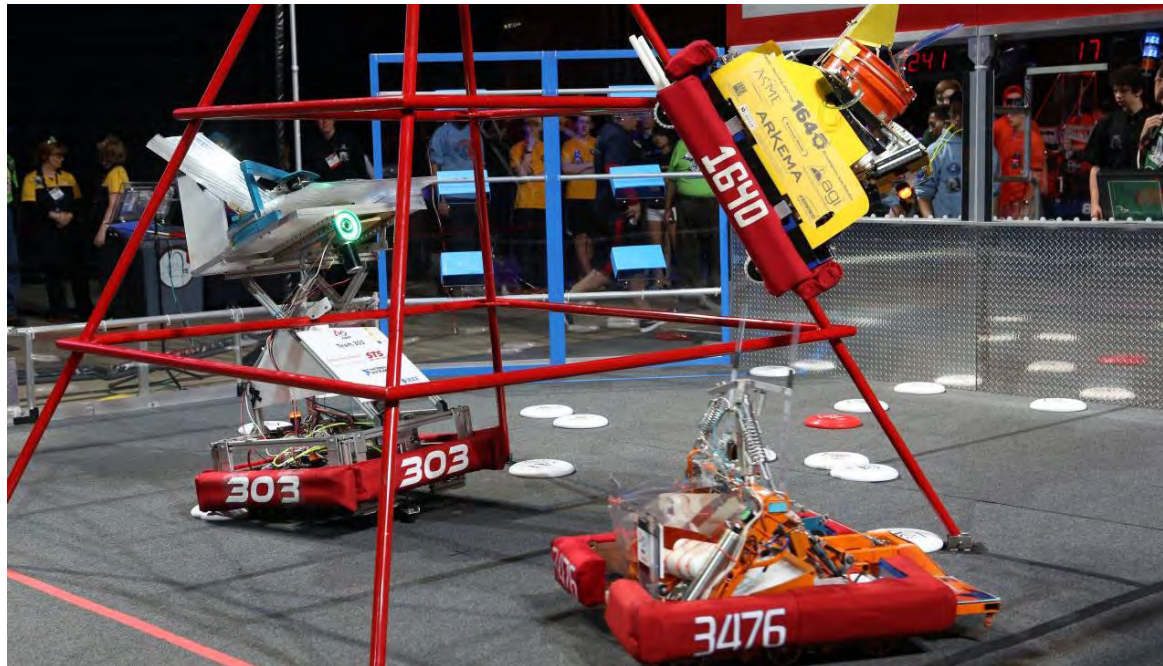


***FIRST* Robotics Competition (FRC)**



MACQUARIE
University

- Work alongside technical professionals
- Controls, Systems, Mechanical, Electrical



***FIRST* Robotics Competition (FRC)**



- ENGINEERING “START-UP”

- MORE THAN JUST ROBOTS

Business

Media

Animation

Web

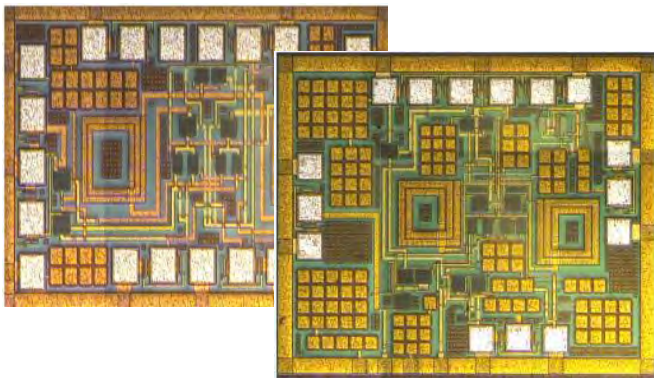
Marketing

Finance









2009





MACQUARIE
University

2009



2013



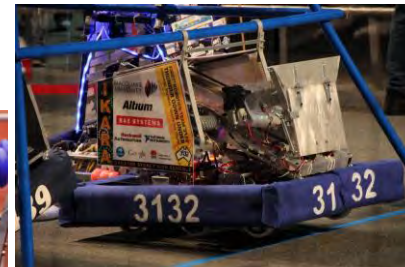
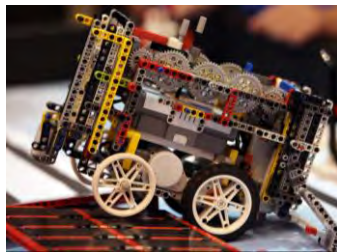


MACQUARIE
University

STEM
Professionals
in workplace



STEM
Majors at
University



INTERNSHIPS

- Google, CSIRO, NICTA, ...

PRESTIGIOUS SCHOLARSHIPS

- Google Anita Borg Scholarship

GLOBAL LEADERSHIP PROGRAM

MISSION TO MARS

UNIVERSITY HONOURS AND SUCCESS



You're Invited



Brisbane Regional Tournaments

November 2015

Australian National Tournament

5 December 2015

Asia Pacific Open Championship

July 2016



Brisbane Regional Tournament

November 2015

Australian National Tournament

5-6 December 2015



Australian Regional

17-19 March 2016