

NCA Lights



**Welcome to
RoboHit™
Kickoff**



Overview

- Introductions
- RoboFest[®]
- Times and Locations
- Sign-up
- Sponsors

Presented by Coach Fred Brauchler

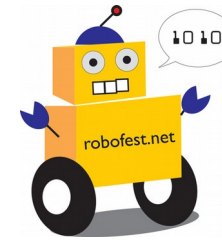


Introductions

- NCA Lights – Robotics and technology club of Northville Christian. Competed in FLL 4 years and RoboFest 6 years. Summer Robotics classes for 5 years.
- NCA Lights Awards:
 - 7 FLL teams to advanced to State Championship.
 - 15 RoboFest teams advanced to State Championship.
 - 8 RoboFest team World Championship Trophy winners.
 - World Championship in RoboFest Games 2012, 2014 and 2015
 - RoboFest People Choice award at RoboParade 2014
- Fred Brauchler, Ph.D. – Head coach/Mentor and Engineer



LAWRENCE TECHNOLOGICAL UNIVERSITY
ROBOFEST

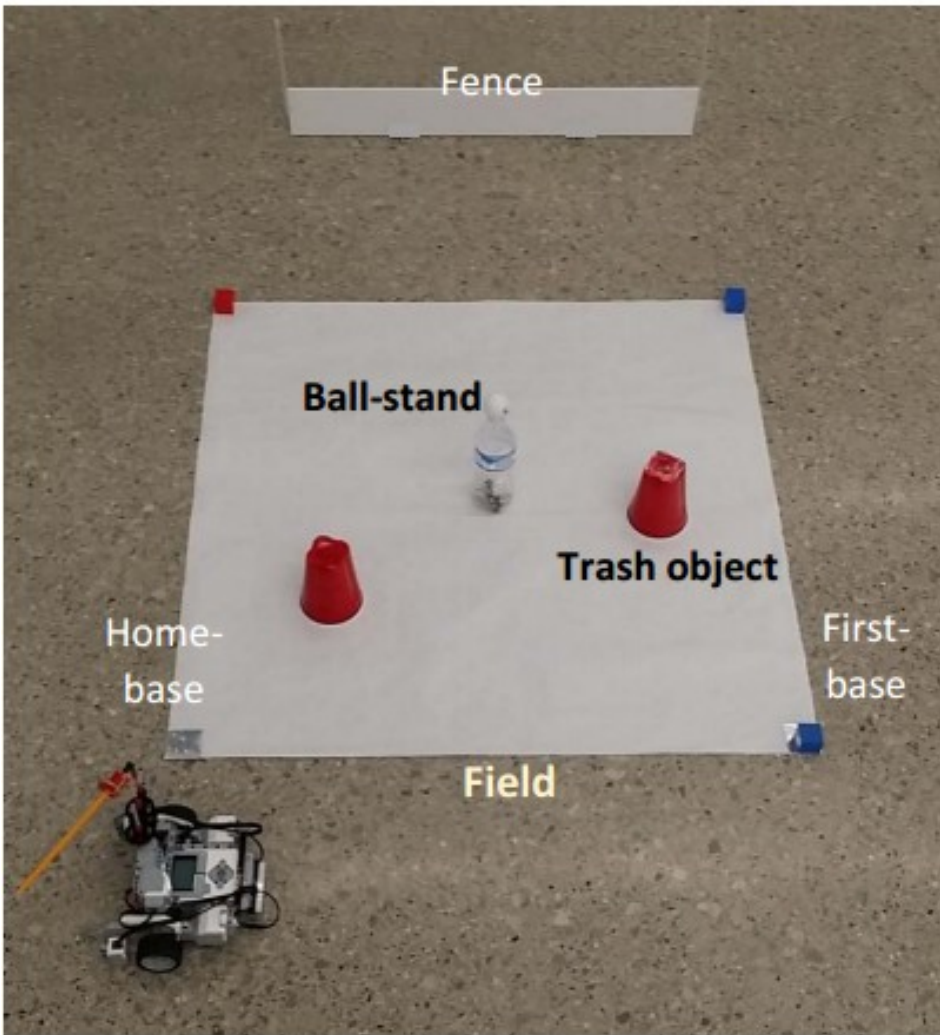


- Was founded in 2000 by Dr. CJ Chung, professor at Lawrence Tech (LTU).
- Has introduced 25,000 young people to problem solving through engineering and robotics.
- Has many competition/event categories: See Robofest.net

Game	Accomplish robotics missions using fully autonomous robots. Robofest Game especially <i>puts math skills to the test</i> .
Exhibition	Each team has complete freedom to show off any creative computer programmed robotics R&D project.
VCC	Vision Centric Challenge. Advanced category for Sr. high school and college students
BOTTLESumo	Be the first robot to push intentionally a bottle off the table OR be the last robot remaining on the table. (Level: beginners)
RoboParade	A parade of autonomous robotic floats (Level: beginners)
GRAF	Global Robotics Art Festival. Robotic Music, Fashion & Dance, Robotic Painting, and Interactive Kinetic Sculptures
UMC	Unknown Mission Challenge. Mission tasks will be totally unknown until the day of competition



RoboHit™ – Robofest® 2017 Game



- Robot to find and hit ping-pong ball over fence with a pencil, clear other objects from the field, and return to home base
- Time limit is 2 minutes.
- Robot is fully autonomous.
- Many unknown factors



RoboHit™ – Robofest® 2017 Game

Competition is for beginner to advanced students ~5th – 12th grade in two divisions Jr. high and high school. (4th graders or below need to be accompanied by a parent/guardian.)

- Students will work in small groups to build and program a robot to complete some or all objectives of the RoboHit game.
- All robot design and construction will be done by the students. Coaches/mentors will provide guidance and run power tools if needed.
- Students will learn how to program an autonomous robot (no remote control) to move, follow a line (field edge), measure distances, sense objects, and control hitting mechanism.
 - Students are encouraged to use their own laptop (PC or Mac) so work can progress outside of regularly scheduled meeting time.



RoboFest Requirements for Coaches/Mentors/Parents

- Focus is on students learning the computer technologies, science, engineering, and mathematics while having fun.
- Students do all the work: designing and building of the robot, problem solving, and programming.
- Adults can help students find answers, but cannot give answers or make the decisions in detail.



Meeting times and Important Dates

- **Build:**
Saturday mornings at Coach Fred's house in Canton starting on Feb04. Specific time TBD
- **Learn Programming:**
Wednesdays 5:30-6:30pm in room G09 at Northville Christian and/or attend a workshop at LTU.
- **Half-day programming workshops available at LTU:**
Saturdays Jan14 – Feb 11
Coach teaching EV3 Jan 21 at 1-4pm, Jan 28 at 9-noon and 1-4pm
- **Events:**
Practice competition Feb 18
Robofest Qualifiers March-April TBD
Michigan Championship May 13
World Championship June 3 in St. Pete Beach, FL



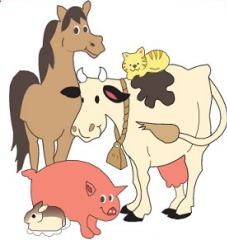
Sign-up

- Sign-up sheet or send me an email: Lights@NCALife.org
- Robofest Informed Consent, Release and Media Authorization Form, and Emergency Contact.
- Cost: \$30/student or \$40/family donation to NCA. Covers team registration.



Thank you 2016 Sponsors

Real Life Farm



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and anonymous individuals

We are looking for more sponsors. Please consider a private donation or ask your place of business to support us.

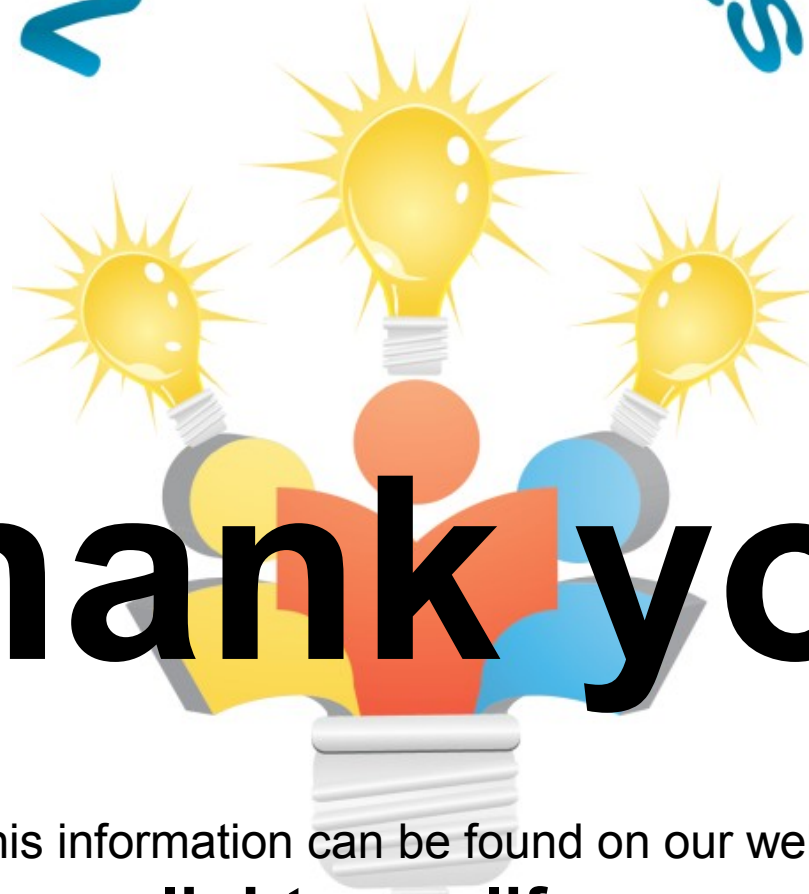
We want to keep costs down for every student but we need EV3 equipment!



Other needs

- Additional Mentors – great opportunity for dads to interact with your kids. Experience is not required.
- Parents help/encourage your student at home to think of ideas and practice programming.
- We will accept donations of EV3 robots/kits.

NCA Lights



Thank you

This information can be found on our website:
lights.ncalife.org



How do the Competitions work?

- Every competition or qualifier has two rounds.
- At the beginning of a round, the unknown factors are revealed and students are given 30 minutes to make programming or physical changes to their robots. During this time, no parents/coaches/mentors can help in any way.
- After the 30 minute work time, robots must be impounded so the competitions may begin. Students can impound their robots earlier.
- Two students from a team may stand at the playing field during their teams run. They will set up the robot according to the starting parameters and initiate a start condition when the instructed to start.
- After the completion of their run, the judges will tally the table condition, and when the student agrees with the judge, she/he will sign the score sheet.
- The robot is then put back into impound until the end of the round.