# 18th LAWRENCE TECHNOLOGICAL UNIVERSITY ROBOFEST 2017

## Kick-off Info Meeting

V1.4 1/11/17

This PowerPoint file can be found at robofest.net under the **"What's New"** Section and the **Get Involved→2017 Main** Page

# Welcome to Robofest 2017

## *Little robots, Big Missions*

- Dr. CJ Chung, Prof. of Computer Science, Founder and Director
- Dr. Chris Cartwright, Associate Prof. of Mathematics
- Dr. Joe DeRose
- Dr. Fred Brauchler
- Dr. John Miller
- Prof. Gordon Stein
- Prof. Keith Bozin
- Prof. Maurice Tedder
- Prof. Jon Ruszala
- …

- Shannan Palonis, Coordinator
- Katie Bis, Coordinator
- Marilyn Weisman, MCS Department
- Chris Parker, Program Assistant
- Teri Dubois
- Don Dubois
- David Carbery
- Nicholas Paul
- Nirmit Changani
- Devson Butani
- Candace Byrnes
- Daniel Oliver
- Charles Faulkner
- Judith Williams
- …

# Robofest 2017 Kick-off Informational Meeting Agenda

***I. Overview***

*II. Rules for Each Main Competition Category*

*III. Intro to Open Competition Categories*

*IV. 2017 Registration*

*V. Schedule*

*VI. Q & A*

# Robofest Mission Statement

Robofest's mission is to

- Inspire K-16 students for Science, Technology, Engineering, and Mathematics (STEM)
- Develop creativity and problem solving skills
- Prepare them to excel in higher education and technological careers

# Features of Robofest

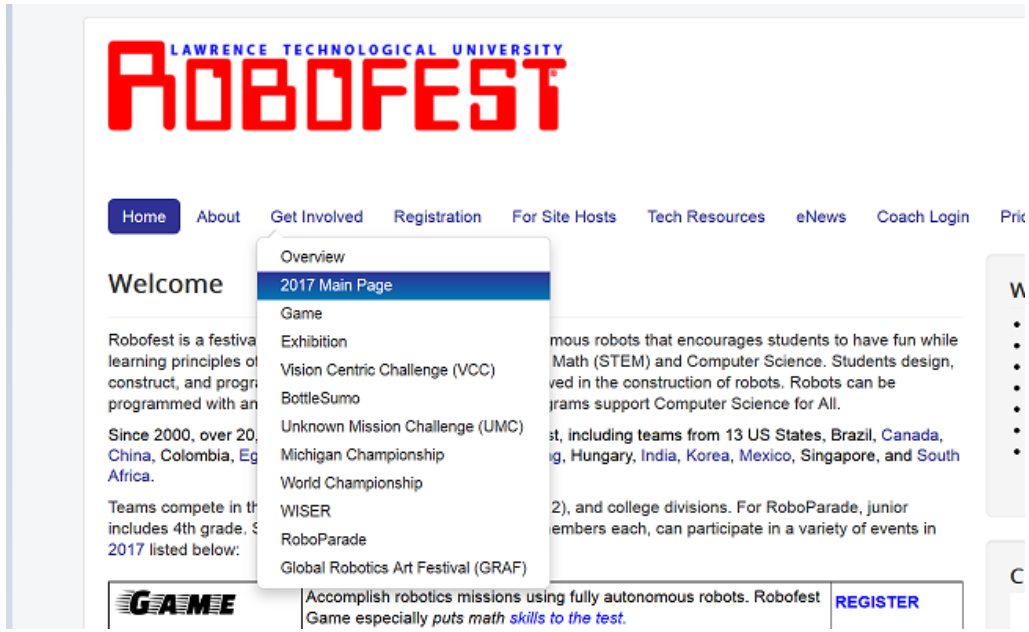
- Autonomous – Sensors required
- Challenging - dynamic playing fields, unknown factors, and **no** direct adult help allowed
- Any robotics kit / system
- Affordable (reuse old kits; Registration fee: $50)
- Pre and Post Assessments (on-line)
- Qualifying Competitions, (Michigan Championship or Virtual Regional) & World Championship
- Age Divisions for most categories:
  - Jr. Division: 5th – 8th (in spring 2017)
  - Sr. Division: 9th – 12th (in spring 2017)
- Variety of competition categories for more opportunities in STEM learning

# 2017 Season Opportunities

- Main Qualifying Competitions
  - Game
  - Exhibition
- Open Competition Categories
  - Vision Centric Challenge (Vcc)
  - BottleSumo
  - Unknown Mission Challenge (UMC)
  - Global Robotic Art Festival (GRAF)
  - RoboParade
  - Robot Drawing Contest

# 2017 General Rules

- Official General Rules Document and other important forms can be found on the robofest.net website under the **Get Involved→2017 Main** Page




- Coaches are responsible to communicate rules updates to contestants

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# Qualifying Competitions

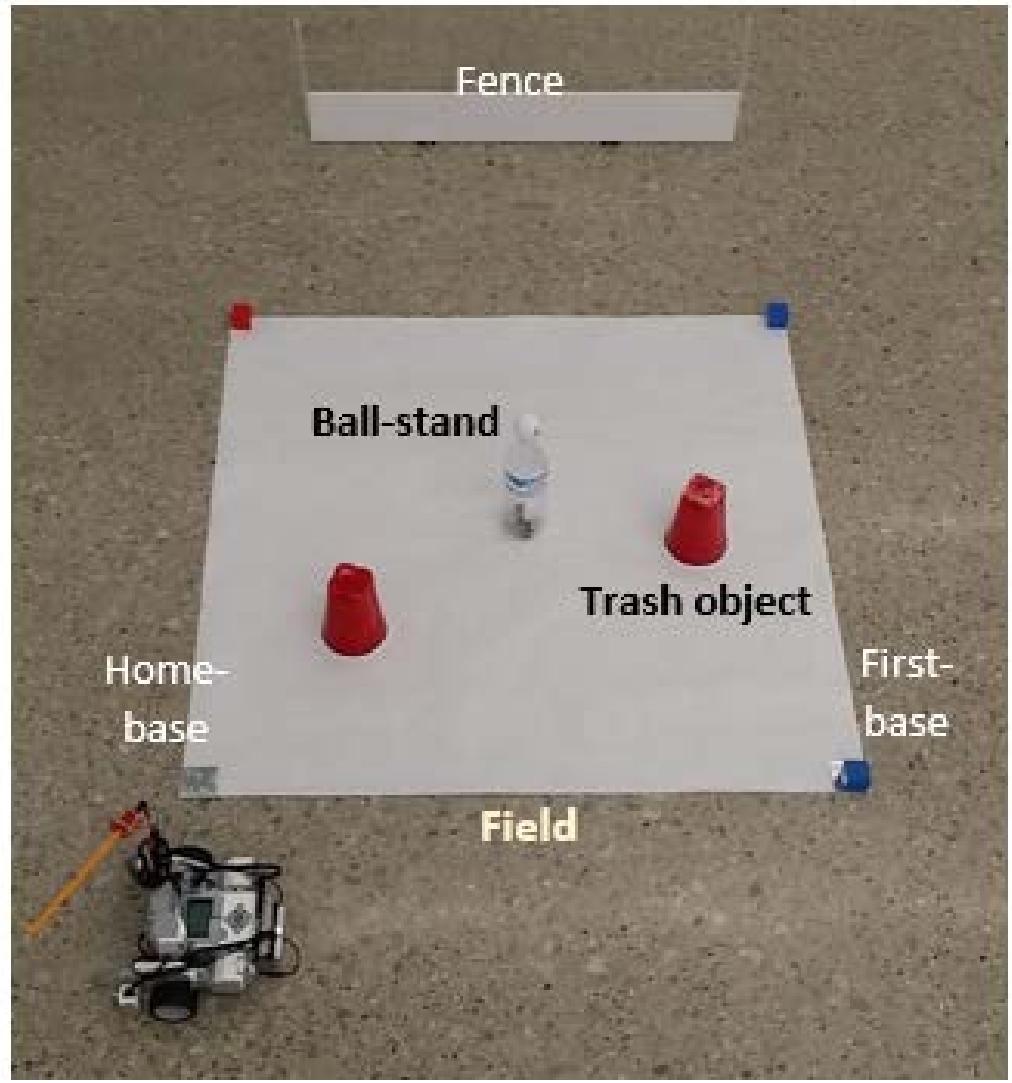
| Competition Category | Age Division | Team Size | Robot | Unknown factors |
|---|---|---|---|---|
| **Game – RoboHit** | Jr. & Sr. | Max 5 | Any | Yes |
| **Exhibition** | Jr. & Sr. | Max 5 | Any | Lighting Condition |

**Team Registration Fee: $50**

**(participation medals, certificates, and winners trophies)**

# RoboHit – 2017 Game

- A Ball-stand is located at the center of a white baseball field
- Square for Junior or rectangle for Senior
- Placed on dark floor
- Fence with 2 poles attached at both ends of a board stands a distance away from the field



# RoboHit – 2017 Game

- A robot is to locate the ball stand (emptied water bottle with three AA batteries inside) and hit the ping-pong ball resting on the top of it using a standard pencil as a bat.
- Points are earned depending on where the ball is hit.
- A home-run (highest points) will be scored if the ball flies over the fence or hits either pole.
- Additional points are earned if the robot visits bases and returns back to Home-base, stops, and rests. A visit is defined by a block being completely removed from the field.

# RoboHit – 2017 Game

- Points are also earned if the robot locates one or both of the 2 trash objects and removes them completely from the field.
- All the tasks should be done completely autonomously within 2 minutes without any external help.
- At the World Championship on June 3, 2017, there will be unknown task(s) that require program changes and/or additions.

# RoboHit – 2017 Game

- Go to robofest.net and click on Game link to watch 8 videos (YouTube Playlist) with different scores
- Or directly at: https://www.youtube.com/playlist?list=PLoaa287K8J2w7yuewrx-jh4HqkhNtVrQq

View the Official Game Rules and **Judging Score Sheet** online by going to robofest.net → Get Involved → Game

# RoboHit – 2017 Game

## Detailed Rules

a) Violations are defined as:
   - Human player touches either the robot or any field material
   - If the robot completely leaves the field, i.e., the distance between the edge of the robot and the edge of the Field becomes greater than approximately 5cm without considering connector wires. (Judge's discretion; 5cm boundary will not be marked)
   - Any part of the robot (including the bat) touches the fence

b) If any violation in "a)" occurs, then judges will announce a violation, stop the run, and ask team if they want to reset the whole field. See "d)". If team declines the reset, the run will end and the score will be calculated.

c) The player may also ask to stop the run (no reset) *or* for a complete reset be done at any time even if there is no violation. See "d)"

d) Only one complete reset is allowed for a run with a penalty defined on the scoring sheet.

# RoboHit – 2017 Game

## Detailed Rules

e) When the field is reset, all the points earned from the previous attempt are lost (cleared).

f) The complete reset will be done by a Judge while the 2-minute countdown timer continues to run. Judges must reset as quickly as possible. No partial reset is allowed.

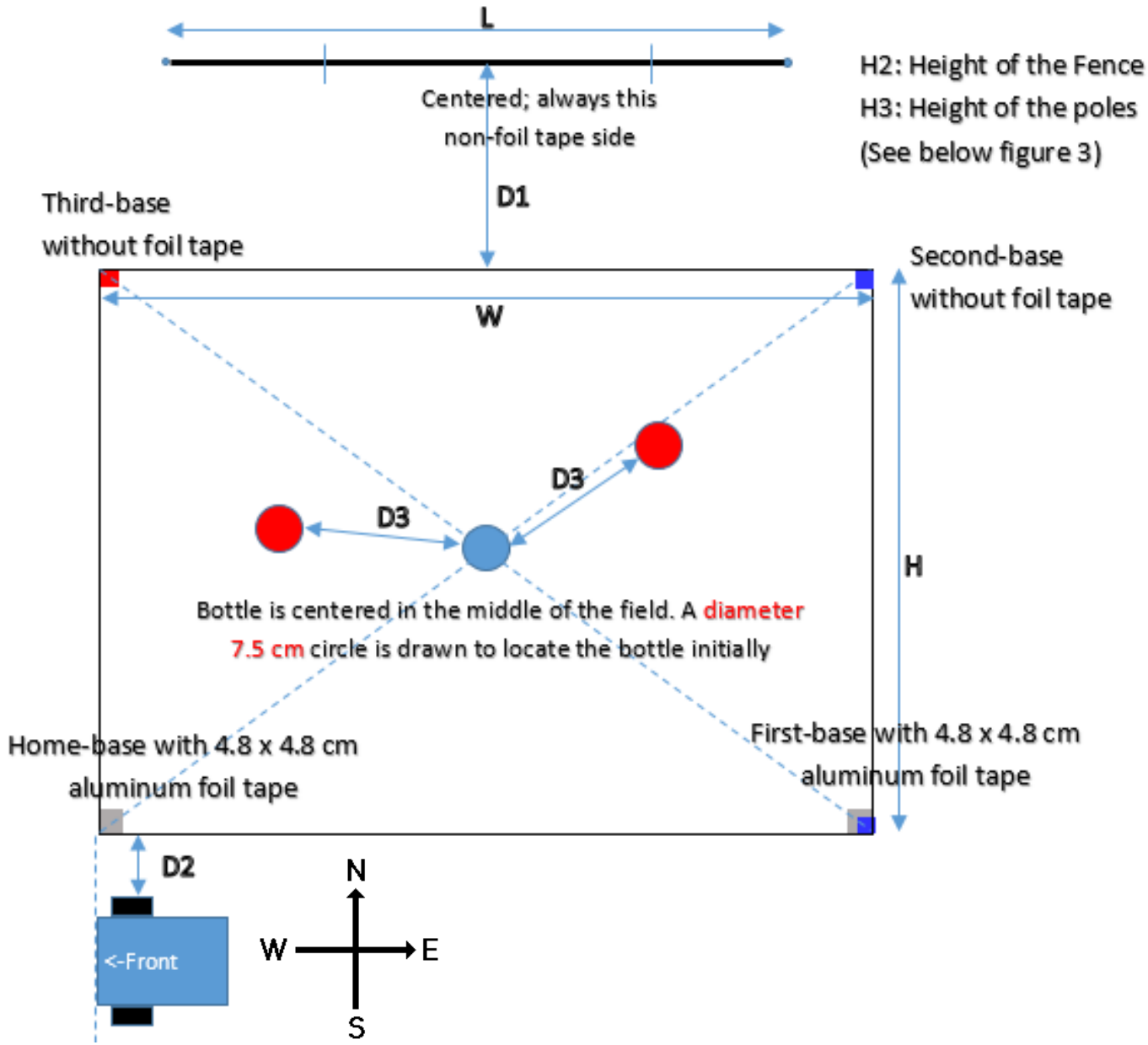
g) The robot may attempt/complete the three tasks (hit the ball, visit bases and remove trash objects) in any order with the final task then being to stop at Home-base at which point the timer will stop.

h) The ball can be moved off the bottle without being hit by the bat, however the maximum score for the Ping-pong ball without being hit by the bat is 7. (See section 1 of the score sheet)

i) Unknown factors will be unveiled according to Table 1 - Field Dimensions/Unveil Time. A 30 minute work-time will be given to adjust the robot after the unveiling.

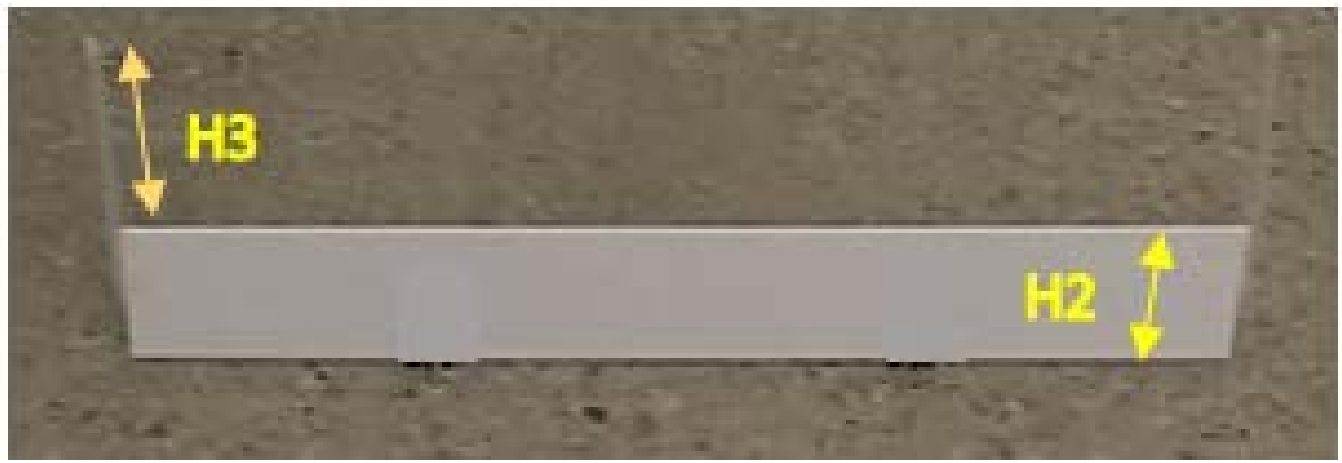
# RoboHit – 2017 Game

## Game Playing Field (example for Sr. Division with Rectangle Field)



# RoboHit – 2017 Game

**Fence with 2 Poles**



# RoboHit – 2017 Game

Table 1: Field Dimensions/Unveil Times

| | Min value | Max value | Unveiled when? | Note |
|---|---|---|---|---|
| L | 50cm | 100cm | At the beginning of competition day | To be used for both rounds<br>See figure 3 |
| W | **70cm** | 120cm | | |
| H | **70cm** | 120cm | | |
| H2 | 12cm | 30cm | | |
| H3 | 15cm | 18cm | | |
| D1 | 35cm | 60cm | Unveiled before work-time for each round | See figure 3 and table 3 |
| D2 | 5cm | 5cm | Fixed | Fixed |
| D3 | 10cm | Unknown | Unknown; different each round | *May* need to sense them |

# RoboHit – 2017 Game

Table 2. Field Component Properties/Color and Unveil Times

| | |
|---|---|
| Floor color | Unveiled at the beginning of competition day. If floor color is bright, dark paper or vinyl will be placed under the Field. |
| Field Material | White paper or vinyl; can be taped to the floor |
| Fence | Supports will be placed & taped on the back side of the fence. |
| Poles | Drinking straws. Diameter is 6 ~ 9mm. Color unknown. Taped at the edge of the fence |
| Home- & First- base | 4.8 x 4.8cm aluminum foil tape; shiny silver. 3M HVAC tape |
| Bottle without the cap | 500ml (16.9 FL Oz) bottle. The height without the cap is about 20cm. Bottle diameter is approximately 7cm. Unveiled at the beginning. The teams may measure the height after check-in. |
| Ping-pong ball | Standard size 40mm; color is unknown. https://www.amazon.com/gp/product/B00M9VXF50 |
| Trash objects | Possible examples: plastic cup, empty soft drink can, etc. Height: 11~14cm. Diameter: 6.5~10.5cm, Weight: 12~15g. Unveiled at the beginning of the day. Actual locations can be anywhere as long as D3 is maintained and will be announced **after** all the robots are impounded. |
| Base objects | The cube is made of six 2x4 LEGO® bricks. 3.2 x 3.2 x 3.2cm. Weight is 13g. Color is unknown |
| Robot orientation | West, North, East, or South – Unveiled before work-time for each round |

# RoboHit – 2017 Game

## Robot Specifications (For both Junior and Senior Division)

1. Robot may expand to hit the ball. However, it must fit within a 35 x 35 x 35cm box before expanding; after expansion, the max size must be less than 54 x 54 x 54cm including the pencil. (54 = 35+19)
2. Weight limitation: none
3. A standard wooden pencil must be attached to the bot for use as a bat. Hexagonal or round shape pencils are allowed. Triangular, carpenter, or flexible pencils are not allowed. Diameter is between 6~7mm. Max length is 19cm. Any part of the pencil surface including the eraser needs to hit the ball to constitute a "legally hit" ball.
4. Any number of sensors/sensor types (unless it is harmful to humans)
5. Any number/type of motors/servo motors (multiplexor is OK to use)
6. Any material/robot kit may be used to construct the robot including tape, glue, bolts and nuts, rubber bands, etc.
7. A Robofest team ID tag on top of the robot is required.
8. A label identifying the **front** side of the robot is required.

# RoboHit – 2017 Game

Table 3 - Difference between Junior and Senior Divisions

| | Junior (5 ~ 8th grades) | Senior (9 ~ 12th grades) |
|---|---|---|
| Field shape | Square | Rectangle |
| D1 value | Less than or equal to that of Sr. | Greater or equal to that of Jr. |
| Number of controllers | One | No limit |

**D1=Distance between the field and the fence.**

# RoboHit – 2017 Game

## Rules to Play Two Rounds and Determine Winners

1. Playing field configuration may be different for each round.
2. When unknown factors are unveiled, teams will be provided hard-copy of unveiled information or the information will be projected on the screen.
3. Teams will be given 30 minutes (work-time) after unknown factors are unveiled to work on their robots. During this time, all people except contestants and authorized staff/volunteers will be **evacuated** from the pit/room
4. All teams must submit their robot to the impound area when 30 minute work-time has expired.
5. During the impounding process, judges will inspect robots. (size of the robot before and after expanding, Team ID, and label indicating the front side)

# RoboHit – 2017 Game

## Rules to Play Two Rounds and Determine Winners

6. After impounding, the judges will setup official playing fields with trash objects.
7. Teams will compete in a pre-determined order decided by the site host.
8. A maximum of two contestants per team are allowed at the playing field during the run.
9. Contestants must move away at least 1m from the field edge after starting the robot.
10. Timer stops only when the robot stops at Home Base at the end of the run.
11. Judges mark the score for the Ping-pong ball during the run. Final scoring for bases and trash objects is done after the run is over.
12. Bottle (ball stand) location is checked after the run is over.

# RoboHit – 2017 Game

## Rules to Play Two Rounds and Determine Winners

13. A team member must sign the score sheet to confirm the team's score.
14. Entered scores shall be displayed to teams to validate data entry.
15. Winners in each age division will be decided by the **average** Final Score of the 2 rounds. Tie breakers will be: (1) best Score of two rounds, (2) highest time left from best score, (3) rerun, if needed.

Table 4 - Example of breaking Ties:

| Team Name | Round 1 Score | R1 time left | Round 2 Score | R2 time left | Avg. Score | **(1) Best score** | **(2) Time left best score** | Rank |
|---|---|---|---|---|---|---|---|---|
| Team A | 80 | 20 | 100 | 15 | 90 | 100 | 15 | 1 |
| Team B | 100 | 10 | 80 | 0 | 90 | 100 | 10 | 2 |
| Team C | 90 | 20 | 90 | 20 | 90 | 90 | 20 | 3 |

# RoboHit – 2017 Game

## Ball Stand Original Location

- A 7.5cm diameter circle is drawn with pencil on the field to locate the bottle initially as shown:

Circle on the mat

Initial Setup

# RoboHit – 2017 Game

## Ball Stand Original Location

- If any part of the bottle is outside of the circle (see below), Judge will declare the bottle has NOT remained on original location.


**Obvious out**

# RoboHit – 2017 Game

## Ball Stand Original Location

- To help with judging a Lego cube can be used

**The bottle remains inside circle**

**The bottle does not remain inside circle**

Notice that the side of the bottle is wider than the bottom of the bottle, so the edge of the cube must touch the side of the bottle AND the circle for the bottle to be considered “in”.

# RoboHit – 2017 Game

**Important Reminders to be Announced Before Each Round**

- Proctors are watching for Pit Violations including:
  - Coaches or Parents in the pit area during work-time.
  - Verbal/electronic communication between team and coach/parent during work-time.
  - Team member leaves the pit unsupervised before their robot is impounded.
  - Team alters its own robot in the impound area after impound.
  - Team handles or interferes with another team's computer or robot, either in the pit or impound area.
  - Destruction of property.
  - Use of inappropriate words and/or behavior toward team members, other teams, audience, judges or staff.

# RoboHit – 2017 Game

**Important Reminders to be Announced Before Each Round**

- Any violations can result in deduction of points or disqualification at the judge's discretion.
- If anyone sees any suspicious activities, please notify the nearest volunteer immediately.
- Spectators are welcome to take pictures or video, but please make sure your flash is off.

# RoboHit – 2017 Game

**Special Notes**

- Though every effort is made to be consistent and precise in all of the dimensions of the playing field and parts, Robofest assumes a tolerance of ±3mm, unless stated otherwise.
- If there are multiple playing fields at the competition sites, the Chief Game Judge will check consistency between the playing fields.
- Judges & contestants should maintain at least a 1m distance from the field.
- Final decisions are at the discretion of the Chief Game Judge.

# RoboHit – 2017 Game Score Sheet (1/2)

| | Judging Items | | Location/ Or Count | Point Value (per count) | Score Earned / Lost |
|---|---|---|---|---|---|
| #1 | **Ping-pong ball** | Legally hit by pencil | Home-run (over the fence or hits a pole) | 30 | |
| | | | Touched the fence without first hitting the floor | 15 | |
| | | | Bounces over fence | 13 | |
| | | | Outside the field | 10 | |
| | | | On the field | 8 | |
| | | NOT hit by pencil | Outside the field | 7 | |
| | | | On the field (off the bottle) | 5 | |
| | | | On the bottle | 0 | *Max. 30* |
| #2 | Number of Bases visited. The LEGO blocks must be removed completely from the field* | | 0 1 2 3 | 10 | *Max. 30* |

# RoboHit – 2017 Game Score Sheet (2/2)

| | | | | |
|---|---|---|---|---|
| #3 | Number of trash objects removed completely from the field* | 0 1 2 | 10 | *Max. 20* |
| #4 | Bottle (ball-stand) remained on original location. (The bottle is completely inside the circle on the mat) | 0 (no) 1 (yes) | 5 | *Max. 5* |
| #5 | The robot came back to Home-base, stopped, **and** rested at the **end of the run**. Any part of the robot must be on *or* over the Home-base aluminum foil plate. | 0 (no) 1 (yes) | 10 | *Max. 10* |
| #6 | The robot remained intact throughout the run. | 0 (no) 1 (yes) | 5 | *Max. 5* |
| #7 | A Reset was done (Reset penalty) | 0 (no) 1 (yes) | -5 | *Max. 0* |
| (*) No specific order required | | **Total Score** | | *Max. 100* |
| | | **Time left in seconds**<br>*Time stops when the robot comes to rest at Home Base. If #5 is no, then Time Left = 0* | | |

# RoboHit – 2017 Game, FAQ

- Is it a Home-run, if the ball flies over the fence poles but still between the 2 poles? **Yes.**
- Does the robot have to be at the original 35cm size at the end of the run? **No.**
- Can the ball be moved/carried/touched by anything other than the pencil? **Yes, but lower points will be awarded. See Score Sheet.**
- Can a team repair robot and/or change program during the reset? **Yes.**
- Will the 5cm mark outside the Field mat be visible? **No**
- How many points if the ball hits the wall and bounces back onto the Field? **15**
- Can gears, springs, and/or rubber bands be used to assist the actuator in moving the pencil? **Yes, any materials may be used to construct your robot.**

# RoboHit – 2017 Game, FAQ

- How long does the robot need to rest before the timer stops (Is there a countdown?) **The timer will stop when the robot stops at home base. If the robot then moves again (other than a small adjustment), the team will get "0" points for #5 ("stopped and rested") on the scoresheet and the time left will be recorded as "0"**
- Can players/coaches request that the edge of the field be taped down, or is it solely up to the Site Host? **Players/coaches may ask the Site Host if he/she deems it necessary to use tape, however, the Site Host may grant or deny the request to tape down the fields at their own competition.**
- Does the pencil have to **swing** to legally hit the ball? **No, any part of the pencil surface including the eraser needs to hit the ball. The pencil does not have to move relative to the robot.**

# RoboHit – 2017 Game, FAQ

- Is the robot allowed to carry/ have prolonged contact with the ping-pong ball, using the pencil/bat? **Yes, however, it will not be considered a legal hit and will be scored accordingly**
- Can the ball be moved by substances other than the pencil/bat, such as liquid/water, or gas? **Yes, but again, it will not be considered a legal hit and will be scored accordingly**
- Can the bottle be moved outside of the 7.5 in circle, but then moved back inside before time expires? **Yes, scoring is done at the end of the run for all items except the ping pong ball**
- Can the ball be punctured, broken, or physically altered in any way? **No**
- Can more than one pencil be used to move the ball? **A Legal Hit is scored when one pencil contacts the ball like a bat hits a baseball (either with a swing or by the forward motion of the robot).**

# RoboHit – 2017 Game, FAQ

- Is D3 the distance from bottle edge to trash edge OR is it distance from center of bottle to center of trash? **Edge to edge**
- D3 is unknown according to the table in the online presentation. Will it be an unveiled variable at competition? **Announced after robots are impounded – Robot must search**
- More FAQ's will be posted on the robofest.net website

# Exhibition

- Qualifying Competition – Teams advance
- Complete freedom to show off any type of creative intelligent robotics project - Robotics Science Fair
- No Recommended Theme for 2017
- Must employ sensors
- Human to Robot, Robot to Robot interaction strongly encouraged.
- Program controlled remote is allowed, if the program of remote controller is programmed by students.
- 4 minutes are given for an official presentation including demonstration. Team is responsible for keeping the time.

# Exhibition

- Teams should not ask Judges to be a part of the official demonstration.
- Sharing online videos (such as YouTube) is highly recommended
- Space for each team must be limited to **64** square feet including a 6ft or 8ft table.

Example Projects

- Visit robofest.net and click on Prior Years, then Prior Year Exhibitions.
- Watch Videos (or pictures) of all the top winners since 2002

# Exhibition

Judging

- View the Exhibition **Judging Rubric** online by going to robofest.net → Get Involved → Exhibition
- The application of math and science theories which are appropriate to the team members' age level is a strong plus for judging. Not appropriate to the age level is OK, but it may not give any advantages for the judging.
- One member team is allowed, but will get lowest score for teamwork criteria.

# Exhibition

**Robofest Exhibition Judging Rubric** (updated 9-15-2016)

| | |
|---|---|
| **5: Strongly agree** | excellent, advanced, exemplary, or amazing |
| **4: Agree** | good, accomplished, or proficient |
| **3: Neutral** | average, intermediate level, or acceptable |
| **2: Somewhat disagree** | attempted but needs work |
| **1: Disagree** | little attempted or needs lots of help |

1 ~ 5

| Judging Category | Sub Categories | Weight | Score |
|---|---|---|---|
| 1. STEM learning | This project truly demonstrates applications of science, engineering, and math. | 8% | |
| | Students have an age appropriate understanding of the science, engineering and math concepts they applied. | 8% | |
| 2. Project idea and originality | The project idea was very original and showed impressive creative thinking and problem solving skills. | 12% | |
| 3. Project demo performance (robot) | The official public robot demo was free from problems and very impressive. | 12% | |
| 4. Project presentation (humans) | Project presentation was clear, well organized, and delivered effectively. | 8% | |
| | Information on the team poster, brochure was clear, well designed, and able to be understood even by robotic novices. | 4% | |

# Exhibition

| | | | |
|---|---|---|---|
| 5. Teamwork | Specific member roles were clearly introduced. Work division was well-balanced. Team members were respectful toward each other. | 5% | |
| | Teamwork and team spirit were evident. *Note: If the team only has one member, the score should be 1.* | 3% | |
| 6. Robot design | The robot mechanical design was creative, effective, user-friendly, and sturdy. | 8% | |
| 7. Project complexity | The project is complex with multiple features/functions, sensors, and components. | 7% | |
| 8. Practicality | The project shows potential as a useful and practical application of robotics technology. | 7% | |
| 9. Programming | Students were able to explain their programming code. Programs are well structured and commented. | 8% | |
| 10.Team independence | I believe the project was mostly designed, developed, and programmed by students, not by adult coaches, parents, or mentors. The students were able to clearly and confidently explain each part of their project. | 10% | |

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# 2017 Open Competition Categories

- Open competitions - do not require a qualifying competition except in some countries
- Competitions will be held during World Championship, June 1st, 2nd and 3rd, 2017
- First come, first served. Space is limited. Register and pay registration fee early!
- World Championship Vcc, BottleSumo, UMC, RoboParade, GRAF and Robot Drawing Contest Registration will open in March 2017.
- Robot Drawing Contest registration may also be available on site at World Championship

# 2017 Open Competition Categories

| Competition Category | Age (Grade) Divisions | Team Size | Platform | Unknown Factor |
|---|---|---|---|---|
| Vision Centric Challenge (VCC) | Sr. ($9^{th}$-$12^{th}$) | Max. 3 | Any vision-based robot | Partially unknown |
| | College | Max. 2 | Any vision-based robot | Partially unknown |
| BottleSumo | Jr. ($5^{th}$- $8^{th}$) | Max. 3 | Lego NXT or EV3 | Partially unknown |
| | Sr. ($9^{th}$ – $12^{th}$) | Max. 3 | Any | Partially unknown |
| Unknown Mission Challenge (UMC) | Jr. & Sr. | Max. 3 | Lego NXT or EV3 | Fully unknown |
| RoboParade | Jr. ($4^{th}$-$8^{th}$) | Max 5 | Any | None |
| GRAF | Jr. & Sr. | Max 5 | Any | None |
| Robot Drawing Contest | K-$3^{rd}$ | Individual | N/A | None |

Registration fee per team: $50

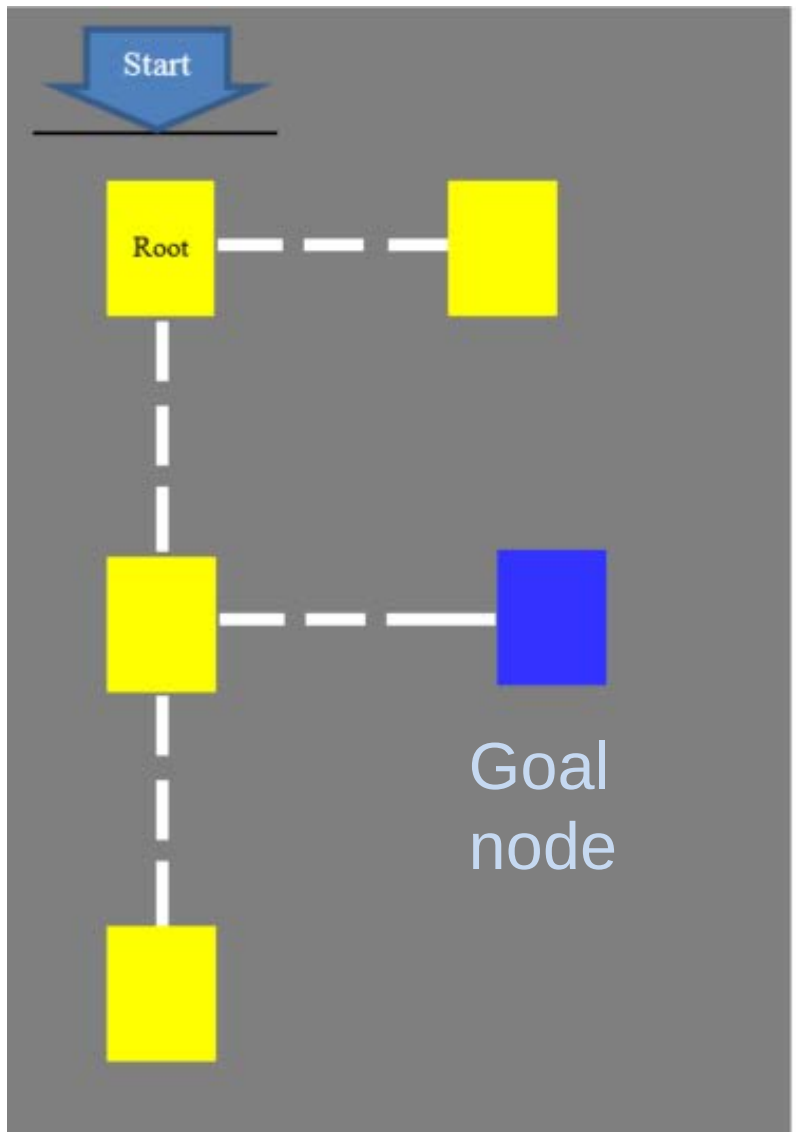
(**participation medals, certificates, and winner's trophies**)

# Vision Centric Challenge (Vcc)

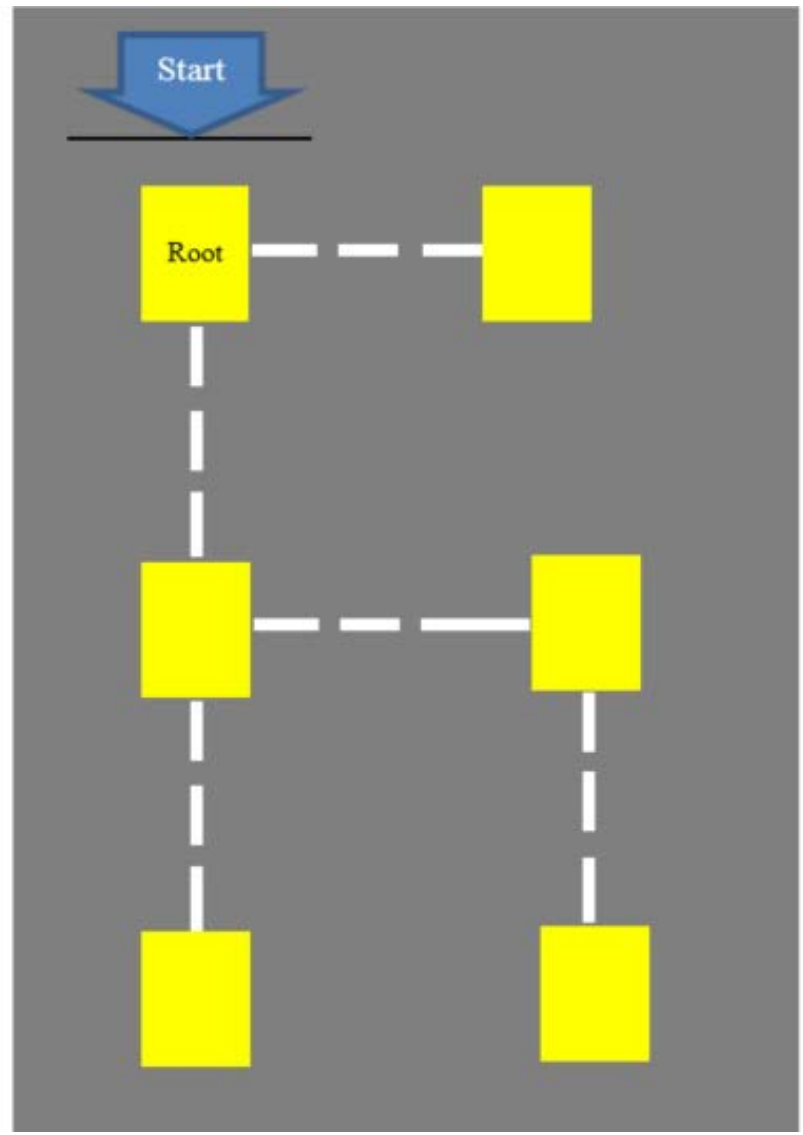
- Vision based Robot navigation challenge
- Advanced Sr. and College divisions
- Rules: robofest.net ➔ Get Involved ➔ Vcc
- 2017 challenge: “Traverse”
  - Sr. Vcc (High School) – Find a goal node and report the depth of the node (Binary tree traversal)
  - College Vcc – Evaluation of an binary expression tree

# High School Sr. Vcc

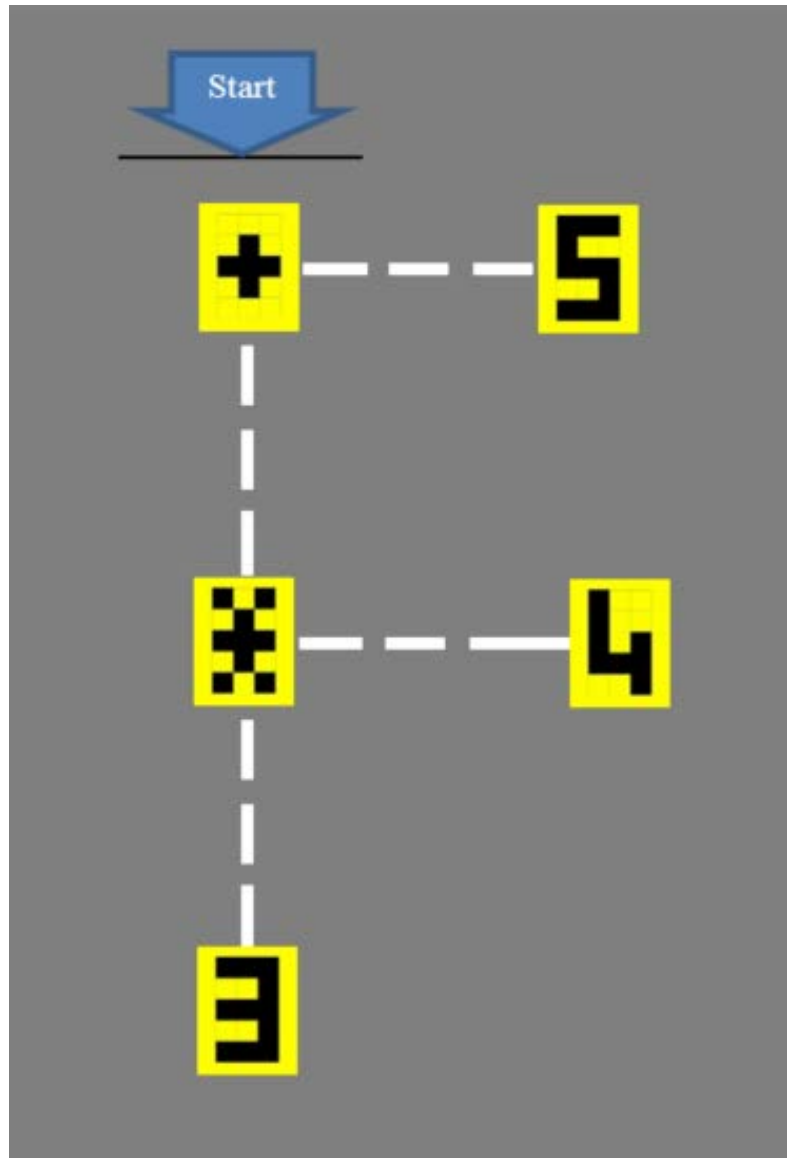
d = 2




d = -1



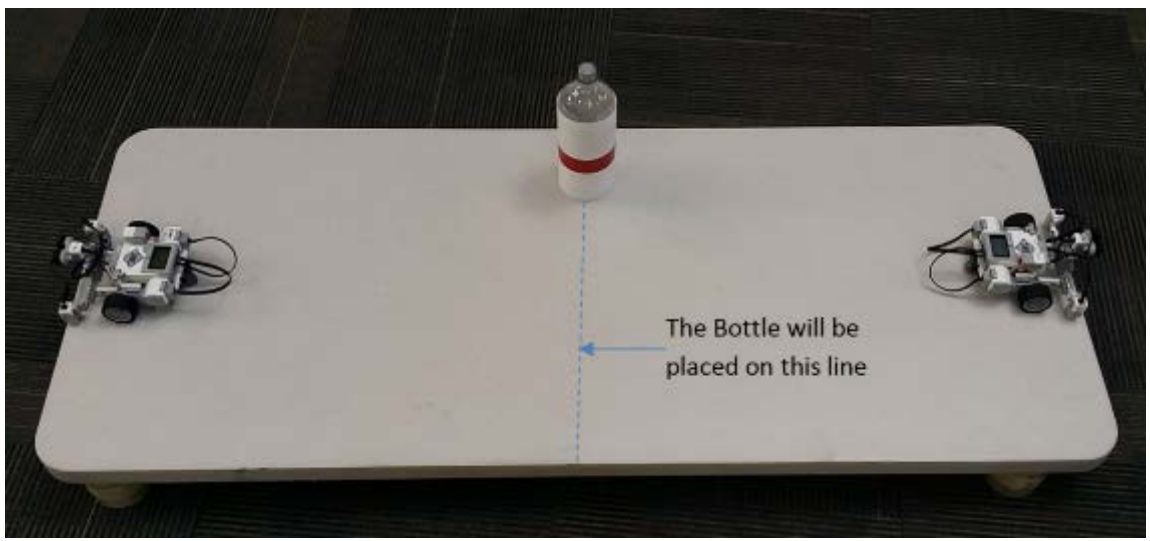
# College Vcc Problem



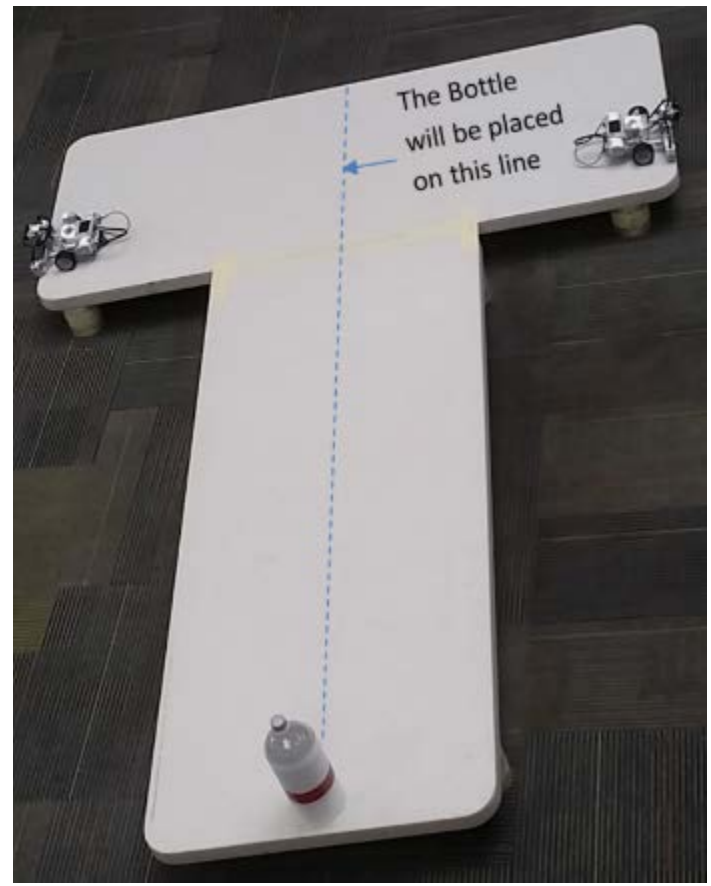

(3*4)+5 = 17 to be reported at the root node

# BottleSumo

- Be the first robot to intentionally push a bottle off the table OR be the last robot remaining on the table.
- Jr. and Sr. divisions
- Rules: robofest.net
  ➔ Get Involved ➔BottleSumo




Jr. Division




Sr. Division, example

# BottleSumo – Junior vs. Senior

| | Junior Division | Senior Division |
|---|---|---|
| Maximum robot weight | 1 Kg | |
| Robot Controller | Lego NXT or EV3 | Any |
| Maximum robot width, length, and height | Must fit in 25x25x25cm box. Robots may *NOT* expand their dimensions during the game. | Must fit in 25x25x25cm box. Robots may expand their dimensions, but the maximum dimensions allowable is 35x35x35cm. |
| Number of robot controllers per robot | One controller only | Any |
| Traditional sensor types | Any unless it can be harmful to humans. | |
| On-board vision sensor system | Not allowed | Allowed |
| Number of sensors | Any | |
| Motor types | Any | |
| Number of motors | Maximum 3 | |
| Wheels or legs | Either | |
| Material | Any. You may use tape, glue, rubber bands, etc. (However, you cannot glue/tape the robot to the sumo ring floor.) Vacuum or sticky tires are not allowed. | |
| Programming language | Any | |

# Unknown Mission Challenge (UMC)

- Missions are completely unknown until day of challenge
- Jr. and Sr. divisions
- Lego NXT or EV3 only
- All robot components must be un-assembled at the beginning of the competition
- Rules: robofest.net ➔ Get Involved ➔ UMC

# RoboParade

- Robots are decorated like parade floats and follow a line and a robot in front of it on the parade route
- Jr. and Sr. divisions
- Jr. division expanded to include 4th Grade
- Rules: robofest.net ➔ Get Involved ➔ RoboParade

# Global Robotics Art Festival (GRAF)

- Similar to Exhibition, but more focused on the visual and performing arts
- Jr. and Sr. divisions
- Rules: robofest.net ➔ Get Involved ➔ GRAF

# Robot Drawing Contest

- Special Open event; does not require a qualifier
- One Division: Grades K-3
- Rules: robofest.net ➔ Get Involved ➔ Robot Drawing Contest

# Robofest 2017 Kick-off Info Meeting Agenda

I. *Overview*

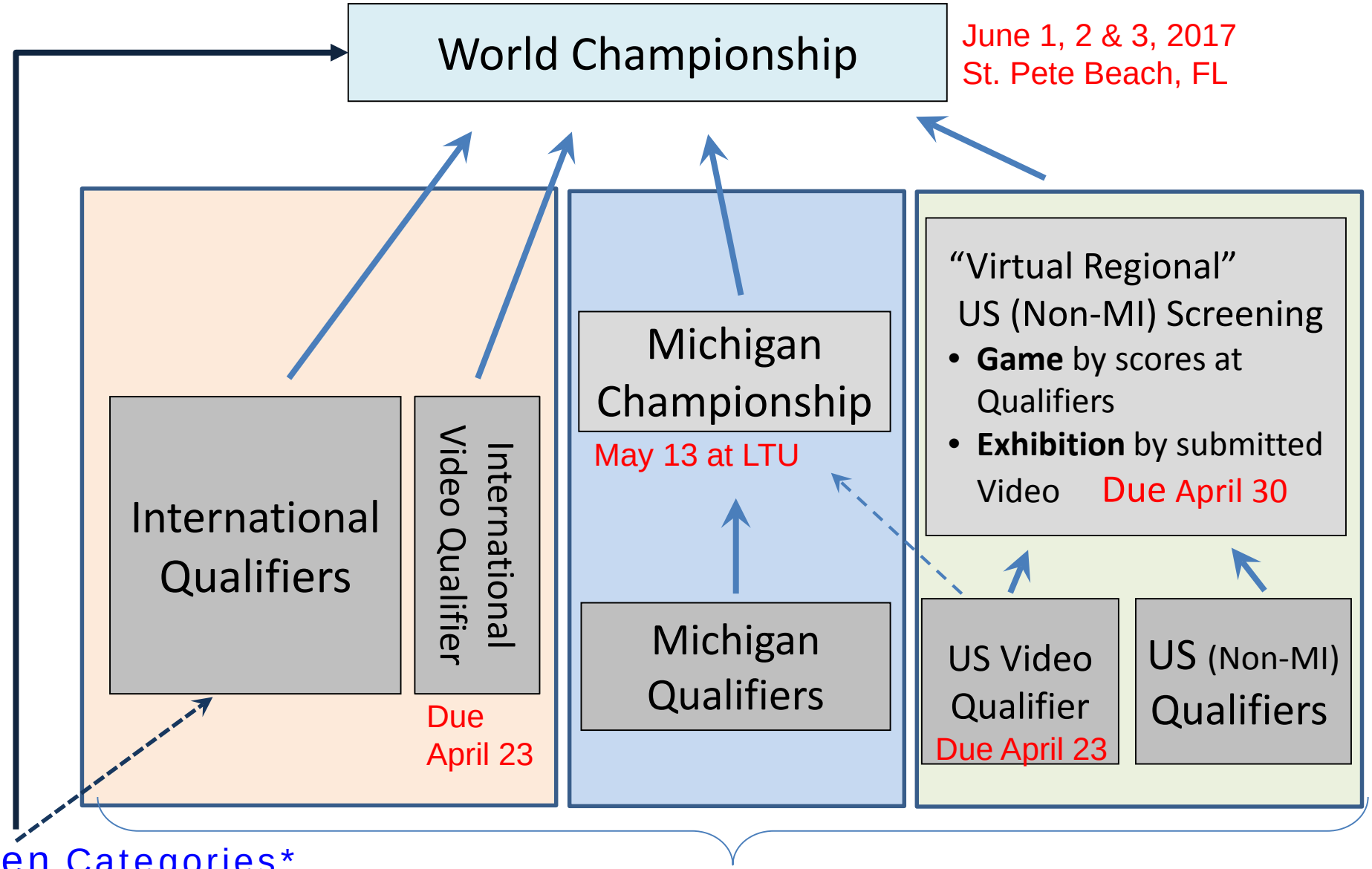
II. *Rules for Each Main Competition Category*

III. *Intro to Open Competition Categories*

***IV. 2017 Registration & How to Advance***

V. *Schedule*

VI. *Q & A*




* India, China, Korea, Hong Kong, Mexico and possibly Egypt, Ghana and others may hold qualifiers to send winners to World Championship

# 2017 Qualifying Sites for Game/Exhibition

- Complete list at robofest.net → Registration
- United States: MI, MA, MN, MO, HI, TX, FL, IN, CA, IL, OH, WA, OR, …
- International: Canada, India, Korea, Mexico, South Africa, Hong Kong, China, Egypt, Lebanon, and Ghana
- Video Qualifier Submission Site
- Early date qualifying sites will advance more teams than later date sites!
- *Still accepting site host applications - Email application to* robofest@ltu.edu

# Video Qualifier Submission: US & International Teams

- US and Canada Game and Exhibition teams who do not have a Robofest Qualifier in close proximity may register for On-Line Video Submission:
  - **USA_Video_Qualifier**
- International Game and Exhibition teams who do not have a National Robofest Director may register for On-Line Video Submission:
  - **International_Video_Qualifier**
- Game teams: contact robofest@ltu.edu prior to the submission to get unknown factors

# Video Qualifier Submission: US & International Teams

- When submitting a video, the coach must include the signed submission form available on the website:
  www.robofest.net/images/2016-2017/PDFs/VideoSubForm17.pdf
- Email the video link to robofest@ltu.edu
- All videos/submission forms must be *received* by Sunday April 23, 2017 11:59pm Eastern Time

# Recognition of Video Submission Teams

- Medals and Certificates will be mailed to each coach
- Winners will be decided by Judges appointed by Robofest office
- Winner's trophies will be shipped to the coach

# Michigan Robofest Championship

- Lawrence Tech University, Southfield, MI on Saturday, May 13, 2017
- Top teams from each Michigan Qualifying Competitions will advance to Michigan Championship
- Sr. Vcc and College Vcc will be the only open category competition at MI Championship

# World Robofest Championship

- St. Petersburg Community Center, St. Pete Beach, FL on June 1, 2 and 3, 2017
- Thursday, June 1: Robot Drawing Contest
- Friday, June 2: RoboParade, BottleSumo and UMC
- Saturday, June 3: Game, Exhibition, GRAF and Vcc

# WISER

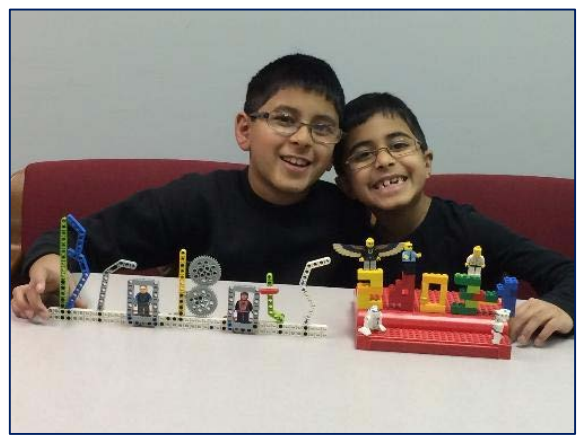
- **W**orld conference on **I**ntegrated **S**TEaM **E**ducation through **R**obotics (WISER) will be held this year
- Friday, June 2 during the World Robofest Championship event
- Call for Participation is open on Robofest.net ➔ Get Involved ➔ WISER
- Teachers, educators, coaches, mentors, parents, robotics enthusiasts, and professionals as well as high school & college students are invited

# Advancing to World Championship Non-Michigan Teams

- Winners of the US Non-Michigan Qualifying competitions will compete in a "Virtual Regional" for an invitation to the World Championship
- Winning Exhibition teams must submit a video of their robot exhibition by Sunday, April 30 by emailing a video link to robofest@ltu.edu
- Winning Game scores will be submitted by site hosts (teams do nothing)
- Game and Exhibition Teams winning an invitation to World Championships will be notified by Robofest World Headquarters Monday, May 5

# Team Photo Contest

- Upload team photograph within 3 weeks after the team registration ***and*** at least 10 days prior to the competition.
- Selection criteria: Upload date (earlier is better), team spirit, unity, harmony, uniqueness, etc.
- Winners will be announced during the World Robofest Championship


2016 Winners

# Registration FAQ

- Can a coach register multiple teams at a site: Yes
- Can a coach use one coach ID to register teams in multiple sites? Yes
- Can a student be a member of multiple teams?
  - Yes, but not the same category
  - For example, a student can participate in Game as well as BottleSumo
- Can a team, for example a Game team, register at multiple sites? No

# Team Registration Deadline

- 11 days before the competition date
- If a division at a site does **not** have 5 teams or more, the division may be canceled.
- Teams registered in the division at the site may be moved to another site; or teams can enter via video submission

# Becoming a Team Coach

- Any teacher, school administrator, parent (not necessarily from a school), tech specialist, or scientist/engineer is eligible to be a coach.
- Coaches must be adults without criminal record.
- Please note: email is the primary and official communication method between Robofest and coaches.
- Coaches must agree to *and* abide by the 2017 Coach's Pledge.

# Coach's Pledge

*As a coach, I am responsible for communicating and enforcing the Robofest rules to team members, team volunteers, and others affiliated with my team. I understand that any rule updates, guidelines, additional information, and announcements will be communicated to me, officially via emails. I am responsible for reading the information and I will relay it to all the people affiliated with my team. If any changes are made to my email account, I will notify Robofest administrators as well as update my coach profile.*

*As a Robofest coach, I understand that the students come first. Robofest is about the students learning computer technologies, science, engineering, and mathematics. Everything my team does starts and ends with the principle: the students do all of the work. My team members will do the designing and building of the robot, problem solving and programming. Adults can help them find the answers, but cannot give them the answers or make the decisions in detail.*

*I intend to uphold and maintain the Robofest spirit.*

# Roles of Team Coach

- Recruit team volunteers, including technical mentors and assistant coaches, if needed
- Find sponsors
- Facilitate team meetings
- Enter/update the team data and upload team & robot photos
- Collect Consent & Release forms to submit at event check-in
- Request Students complete online pre & post assessment

# Age Division Waiver Requests

- Coaches must submit the Age Division Waiver Request Form by email, if there is any age exception.
- Robofest will return the form to the coach with approval or disapproval.
- Usually, playing up from Jr. to Sr. is permitted.

# Steps to Register a Team

1. Read 2017 General Rules (robofest.net/Get involved/2017 Main Page)
2. ***if you are a returning coach**, skip to 5*
3. Go to robofest.net, click on Coach Login, and submit New Coach Registration form
4. Confirm the registration at your email account – If you do not receive a confirmation email, please contact robofest@ltu.edu
5. Log on to the coach account at robofest.net
6. Select a competition site and a category per team
7. Register team(s)
8. Pay registration fee online using PayPal (or send a check)
9. Upload team photo; update team info as necessary

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**V. *Schedule & Misc.***

VI. *Q & A*

# 2017 Main Season Schedule

- November 18: Rules announced & posted on the web; Team registration open
- January 15 2017: finalization of Rules; watch for eNews announcement. Join eNews list at robofest.net
- January ~ February: On-site technical workshops and Webinars – Registration open for competing teams.
- February 18: Warm-up at LTU (Judge Training)
- March ~ April: Qualifiers, post assessment
- April 23: US and International Video Qualifier deadline
- April 30: Video Submission deadline for Screening of Winning US Exhibition teams
- May 13: Michigan Robofest Championship, LTU
- June 1, 2, 3: World Robofest Championship, Florida

# 2017 Workshops

- *On campus workshops are only for registered and paid teams.*
- RoboHit Game:
  - EV3 Workshops at LTU: Jan 14, 21, 28 and Feb 4
  - EV3 Webinars: Jan 24 and Feb 4 (to be recorded)
  - RobotC Workshops at LTU: Jan 28 and Feb 11
- Vcc:
  - L2Bot Workshop at LTU: Mar 4
- Complete list at www.robofest.net, click on “coach login” ➔ “Available workshops”

# RoboHit Game Field Kits will be available for purchase

- Robofest office J-233 in Dec ~ Feb.
  - $9.00
  - Plus Shipping and Handling
  - Kits may be picked up in the Robofest Office J233
  - The kits consists of Mat with bases, Goal Post with stand, Empty Water Bottle, Ping Pong Ball, 1 Lego Block, 2 Cups

- To order: Email spalonis@ltu.edu OR call 248-204-3568
- Robofest Office will ship RoboHit Game kits to each official host site (as listed in site host Letter of Agreement)

# Trophies and Certificates

- Coaches can order Duplicate Trophies
  - For teams who place at any event
  - Exact duplicate of the trophy awarded
- Coaches can order “Winners Certificates”
  - For teams who place at Championship Events
  - Indicates the Participant’s Name, Team Number, Event and award
  - Fee: $5.00 per certificate plus shipping and handling
- Order forms and pricing information will be available on Robofest.net

# Online Surveys for Math and Science (anonymous)

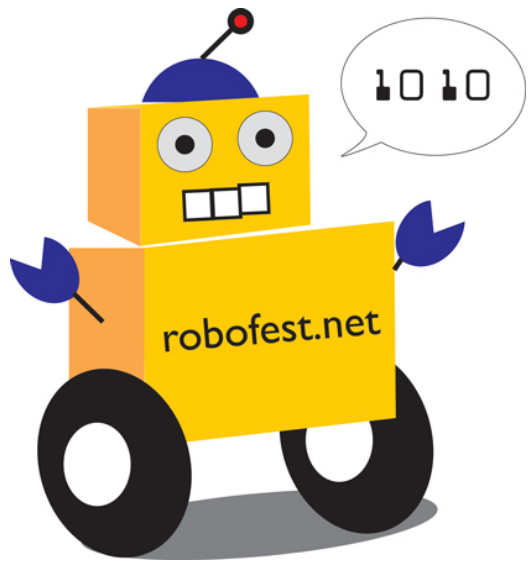
- Pre-survey: Instructions will be emailed to coaches when teams are registered.
- Post-survey: After the qualifier, instructions will be emailed to coaches in April.

# *NEW* LTU Scholarship Opportunity for all Robofest Participants

- A new scholarship opportunity available for distinguished Robofest team members who attend Lawrence Technological University.
- Submit your application, along with a 400-word essay regarding your Robofest experience, your career goals, and a letter of recommendation from one of your Robofest adult coaches or mentors for a chance to earn a $3,000 renewable scholarship.
- Deadline date: April 1st. The application can be found on the LTU.edu website at: https://www.ltu.edu/cm/attach/44851ee6-dffc-48f0-8c4e-cb0c0ea8bace/robofestscholarshipform-1.pdf

# Questions?

Thank you!




Send questions, comments, corrections, and suggestions to robofest@LTU.edu

join the Robofest eNews list at robofest.net!