

20th LAWRENCE TECHNOLOGICAL UNIVERSITY **ROBOFEST** 2019

Kick-off Info Meeting



V1.2 01/12/2019 – US Final Kickoff

This PowerPoint file can be found at robofest.net under the “What’s New” Section and the **Get Involved→2019 Main Page**.

Welcome to Robofest 2019

Little robots, Big Missions

Robofest 2019 staff

Veteran Staff (Over 10 years)

- Dr. CJ Chung, Prof. of Computer Science, Founder and Director
- Elmer Santos, Assistant Director
- Dr. Chris Cartwright, Prof. of Mathematics
- Marilyn Weisman, MCS Department
- Teri Dubois, Coordinator
- Don Dubois, Coordinator

- Shannan Palonis, Coordinator
- Pam Sparks, Coordinator
- Judith Williams
- Dr. Fred Brauchler, Workshop Instructor
- Dr. Joe DeRose, Workshop Instructor
- David Carbery
- Dr. Destiny Anyaiwe, Prof. of Computer Science
- Nicholas Paul

Student Assistants

- Daniel Oliver
- Charles Faulkner
- Mark Kocherovsky
- Joe Jeon
- Candace Byrnes
- Adilur Choudhury
- Many More

Robofest 2019 Kick-off Informational Meeting Agenda

I. Overview

II. Schedule

III. 2019 Registration and How to Advance

IV. Open Competition Categories

V. Rules for Each Main Competition Category

VI. Q & A

Robofest Mission Statement

Robofest's mission is to:

- Generate excitement and interest among young people for Science, Technology, Engineering, and Mathematics (STEM) and Computer Science
- Develop soft skills such as teamwork, leadership, creativity, communication and problem solving
- Prepare students to excel in higher education and technological careers

Features of Robofest

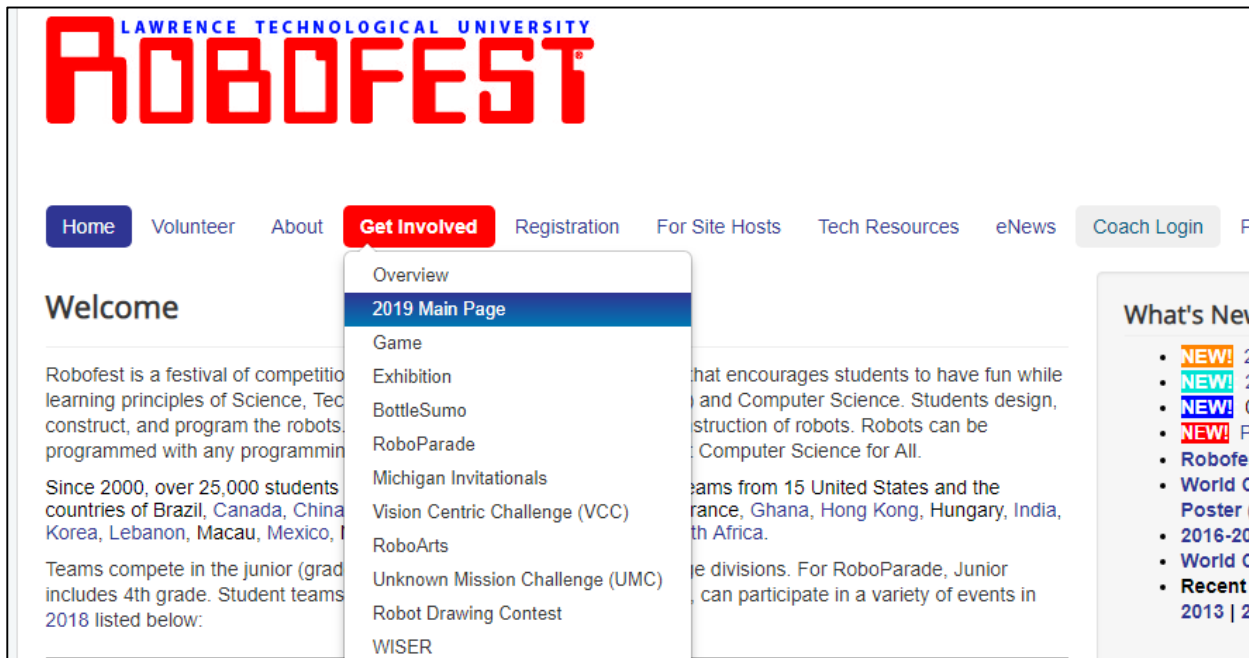
- Autonomous – **sensors required**
- Challenging - dynamic playing fields, unknown factors, and **no** direct adult help allowed
- Any robotics kit / system
- Affordable (reuse old kits; Registration fee: \$50)
- Pre and Post Assessments (on-line)
- Qualifying Competitions, MI Invitationals & World Championship
- Age Divisions for most categories:
 - Jr. Division: 5th – 8th (in spring 2019)
 - Sr. Division: 9th – 12th (in spring 2019)
- Variety of competition categories for more opportunities in STEM learning

2019 Season – 7 Opportunities

- Main Qualifying Competitions
 - Game
 - Exhibition
- Open Competition Categories
 - RoboParade
 - BottleSumo
 - Vision Centric Challenge (Vcc)
 - Unknown Mission Challenge (UMC)
 - RoboArts

2019 General Rules

- Official General Rules Document, and other important forms can be found on the robofest.net website under the **Get Involved** → **2019 Main Page**



The screenshot shows the Robofest website header with the Lawrence Technological University logo. The navigation menu includes 'Home', 'Volunteer', 'About', 'Get Involved', 'Registration', 'For Site Hosts', 'Tech Resources', 'eNews', and 'Coach Login'. The 'Get Involved' dropdown menu is open, listing options: Overview, 2019 Main Page (highlighted), Game, Exhibition, BottleSumo, RoboParade, Michigan Invitationals, Vision Centric Challenge (VCC), RoboArts, Unknown Mission Challenge (UMC), Robot Drawing Contest, and WISER. The main content area features a 'Welcome' section and a 'What's New' section with several items marked as 'NEW!'.

- Coaches are responsible for communicating rules updates to contestants

Online Surveys for STEM

- All surveys are anonymous
- Pre-survey: Instructions will be included in the team registration confirmation email to coaches when teams are registered
 - Follow up reminder email will be sent before the qualifier.
- Post-survey: After the qualifiers, instructions will be emailed to coaches in April

LTU Scholarship Opportunity

- Opportunity available for distinguished Robofest team members who attend Lawrence Technological University
- Earn a \$3,000 renewable scholarship, a total of \$12,000 over 4 years of college
- 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
- Robofest can assist with a letter of recommendation if requested
- Deadline date: April 1
 - The application can be found in the Admissions/Portfolio and Private Scholarships page on the [LTU.edu](http://www.ltu.edu) website or directly at: <https://www.ltu.edu/cm/attach/44851ee6-dffc-48f0-8c4e-cb0c0ea8bace/ROBOFEST-Scholarship-Application-2019.pdf>

Volunteer Opportunity

- Professionals from any industry are wanted to teach and mentor teams
- Robofest will screen and coordinate teams with volunteers
- Experienced Robofest participants of any age can volunteer to mentor Robofest teams
- Service Hours can be earned:
 - President's Volunteer Service Award
 - National Honor Society
 - Boy Scouts/Girl Scouts
 - School or Church
- Contact Elmer Santos esantos@ltu.edu

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2019 Main Season Schedule

- **October 1:** International Rules published
- **October 26:** Official US Rules announced & published on the website – Kickoff meeting at LTU
- **November 2:** Kickoff meeting and Webinar 6:00 pm
- **November 5:** US Team registration opens
- **January 12, 2019:** Finalization of all category rules
- **January ~ February:** On-site technical workshops and online classrooms – registration open for competing teams
- **February 16:** Warm-up at LTU (Judge Training)

2019 Main Season Schedule

- **March ~ April 21:** US and International Qualifiers; Post-assessment survey sent to coaches
- **April 22:** Video Submission deadline for US and International Video Qualifier Game and Exhibition teams
- **April 22:** Video Submission deadline for Virtual Regional Screening of Winning US Exhibition teams
- **April 26:** Video Qualifier and Virtual Regional teams notified of advancement to World Championship
- **April 27:** Michigan Invitationals at LTU (More dates will be added)
- **May 16, 17, 18:** World Robofest Championship at LTU

2019 Workshops

- On campus workshops LTU Room J234
- Only for teams who have registered and paid for a qualifier
- Pre-registration site is available if you have not chosen your preferred qualifier
- Students can register for multiple workshop types (categories/languages)
- Complete list at www.robofest.net, click on “coach login” → “Available workshops”
- Registration will be open mid-November

2019 Workshop Schedule

- Game:
 - “Robofest 101” EV3 Workshop at LTU: Jan 9
 - EV3 Workshops at LTU: Jan 12, 19, and Feb 9
 - Robot Mesh for VEX IQ Workshop at LTU: Jan 26
 - RobotC for EV3 Workshop at LTU: Feb 2
 - RobotC Graphical for EV3 Workshop at LTU: Feb 9
- Exhibition:
 - EV3 Workshop at LTU: Feb 23
- Vcc:
 - EduBot (Tetrix with Prizm motor controller and Python) Workshop at LTU: Mar 2
- Online Classrooms will be available in January

Michigan Invitationals Schedule

- April 27, 2019:
 - Morning - Junior Division
 - Afternoon - Senior Division
- More to be scheduled during last week in April 2019
- Lawrence Tech University, Southfield, MI
- Computer Science Robotics Lab – J234
- Small events (10 – 12 teams)



World Robofest Championship Schedule

- Lawrence Tech University Campus, Southfield, MI
- Thursday May 16:
 - Jr. BottleSumo Group 1
- Friday May 17:
 - RoboParade
 - UMC
 - Jr. BottleSumo Group 2
 - Sr. BottleSumo (Classic and Unlimited)
- Saturday May 18:
 - Game and Exhibition Championships
 - RoboArts
 - Vcc
 - **Jr. BottleSumo Final Round**



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Becoming a Team Coach

- Any teacher, school administrator, parent, tech specialist, or scientist/engineer is eligible to be a coach
- Coaches must be adults without a criminal record
- **Please note:** email is the primary and official communication method between Robofest and coaches
- Coaches must agree to *and* abide by the 2019 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.

Coach's Pledge - Continued

*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 team sponsors
- Facilitate team meetings
- Enter the team data and upload team & robot photos
- Enter parent's email address for online *Consent and Media Release Form*
- Collect hard copy Consent Forms to submit at event if no online form is submitted
- Request that each Student completes pre & post assessment
- Robofest Coach's Video to help new coaches get started
- on line: robofest.net → Get Involved → Overview

Funding Opportunities

Grants for Teachers

www.grantsforteachers.com



Go Fund Me www.gofundme.com

Local sponsors: Lions Club, Rotary, Target, Walmart, etc.

Fall Grant Deadlines have passed. Watch eNews for 2020 season announcements.

Renting Robot Kits from Robofest Office

- Some (around 10) robot kits will be available in January 2019
- Priority will be given to “registered” teams from
 - Southfield (DENSO sponsored) and
 - Washtenaw County / Ann Arbor area (Toyota Sponsored)
- Please send an email at Robofest@Itu.edu, if your team is interested in this opportunity

Robofest Office in Search of Used Robots

- Robofest office is looking for donations of used EV3 and VEX IQ robot kits
- We will make sure that the kits will be used by Robofest teams in need of the kits
- Tax Deductible – We will provide a receipt
- You will be listed on as a “Friends of Robofest” Sponsor on our website and official poster

FRIENDS OF ROBOFEST

www.aramark.com

ART/DESIGN Group

Clawson, MI

CJ Chung

Howard Davis

Dieter Giese

Dennis J. Howie

Wei Jiang

Robin G. Leclerc

Wei & Yan Liu

Erik Rosvold

Steps to Register a Team

1. Read **2019 General Rules** go to robofest.net → Get Involved → 2019 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

Steps to Register a Team

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

Privacy Policy, Consent and Media Release Form

- Coaches to agree to the *Privacy Policy and Consent and Release Form* online each time they register a team (selection box)

The screenshot shows a web form for Robofest registration. At the top, there is a table with three rows and two columns of empty input fields. Below this table, there are two checkboxes. The first checkbox is unchecked and is followed by the text: "I Have read the [general rules](#) and the event category rules for this team's division." The second checkbox is also unchecked and is followed by the text: "I Agree to the Robofest Privacy and Consent Form:". Below this text is a scrollable text area containing the following text: "For the purposes of this document, 'Robofest' shall be Lawrence Technological University (LTU), and its officers, directors, employees, assigns, and agents, including any third party designated and approved by Robofest at any time. As used below, 'Participant' shall mean any individual, student, mentor, coach, or volunteer involved in a Robofest event. 'Partners' shall mean". At the bottom of the form, there is a button labeled "Register Team". A red arrow points from the top of the form down to the second checkbox.

Privacy Policy, Consent and Media Release Form

- Student form can be completed by the parent electronically through the registration system:
 - On the team registration page, the coach enters a "Parent Email" for each student (student email is optional)

This will be provided to the judges and used to identify your team. Please update if necessary.

Team Video URL:

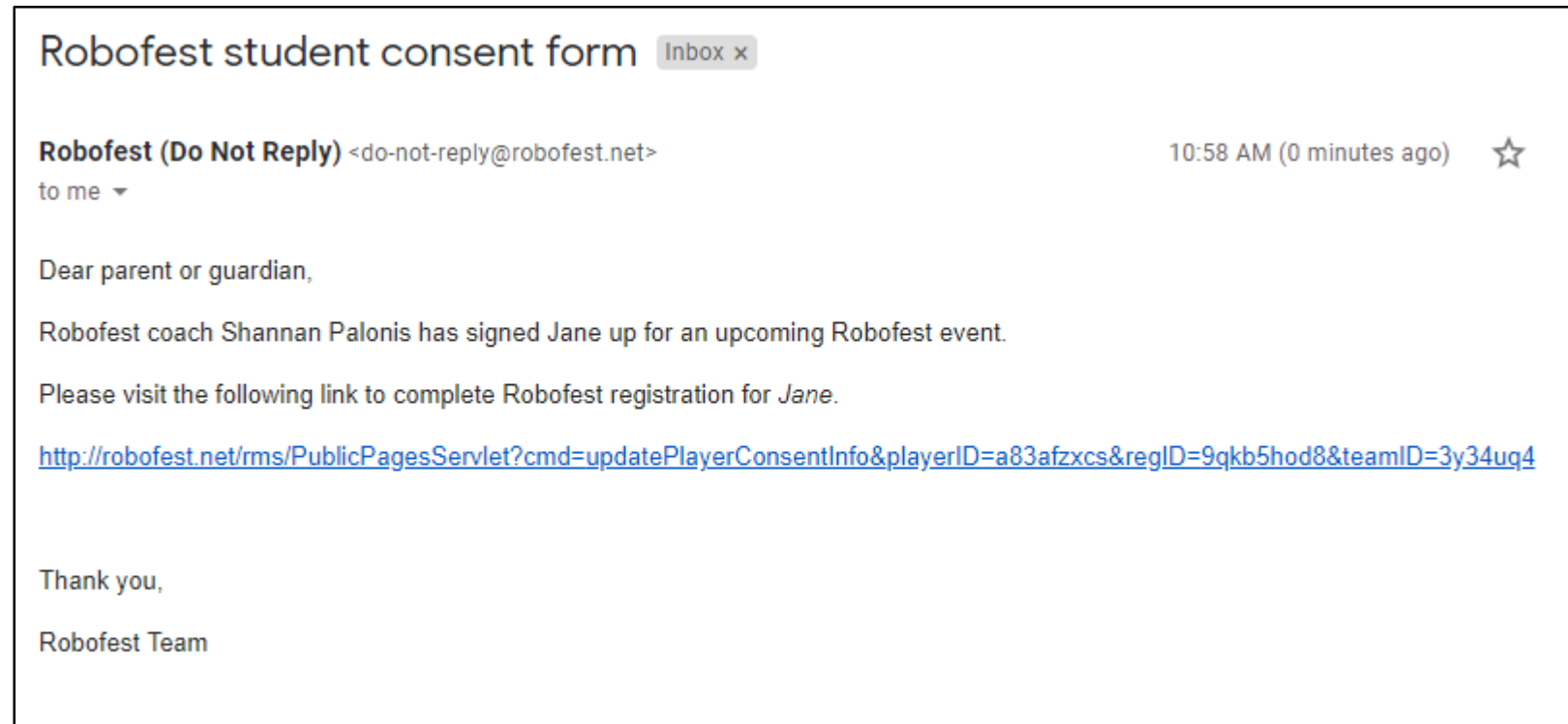
Team Members:

(*at least one)

*First Name	*Last Name	*Gender	*Grade	Student Email	*Parent Email	Race / Ethnicity
Jane	Smith	female ▾	6 ▾	jsmith@xxx.com	<input type="text"/>	Select All That Apply ▾
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Select All That Apply ▾
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Select All That Apply ▾
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Select All That Apply ▾
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Select All That Apply ▾

Privacy Policy, Consent and Media Release Form

- The parent will receive an automated email with a link to complete the form online:



Privacy Policy, Consent and Media Release Form

Informed Consent, Release and Media Authorization Form

Required for all players



For the purposes of this document, "Robofest" shall be Lawrence Technological University (LTU), and its officers, directors, employees, assigns, and agents, including any third party designated and approved by Robofest at any time. As used below, "Participant" shall mean any individual, student, mentor, coach, or volunteer involved in a Robofest event. "Partners" shall mean individuals or entities that manage, organize, sponsor, and/or host Robofest events. In acceptance of my participation in any Robofest programs, meetings or events (collectively, the "Event"),

1. I, the Participant (or parent/guardian if student is under 18 years of age), agree that participant data will be used for Robofest programs such as printed participation certificates and personalized medals. These materials may not be personalized if consent is not given. More information about your rights as a data subject are explained in our Privacy Policy at <https://www.robofest.net/2018/LTU-Robofest-Privacy-Policy-v2.1.pdf>. For other questions about privacy, and options for reviewing or removing your data, please contact robofest@ltu.edu.
2. I, the Participant (OR parent/guardian if student is under 18 years of age), hereby grant to Robofest and its Partners the right to photograph and/or videotape me during my participation in an Event. I further grant to Robofest and Partners, throughout the world, the right to use these photographs and videotapes of my likeness, voice and sounds during my participation, and to license the right to reuse such photographs and videotapes of my participation, and my name, likeness and biography, in any and all media for any purpose, including advertising and other promotions of Robofest, and its Partners, without compensation to me. Each such photograph and videotape shall be a work for hire and Robofest shall be deemed the owner of any copyright and/or trademark rights therein. LTU may use my information for their program promotions.
3. I, the Participant (OR parent/guardian if student is under 18 years of age), being fully cognizant of the risks in participating in an Event, hereby assumes the risks of bodily injury and property damage, inherent in such participation. I hereby waive any claims or causes of action which I may now or hereafter have against Robofest or its Partners, arising out of my participation, and I will indemnify and hold harmless Robofest, and its Partners against any and all claims resulting from such participation.

On behalf of the STUDENT PARTICIPANT, I authorize participation in the Assessing the Impact of Autonomous Robotics Competitions in S.T.E.M. Education conducted by LTU, 21000 W. Ten Mile Rd, Southfield, MI, 48075, USA. I understand this research is a study to quantify students' improvements in Science, Technology, Engineering, and Mathematics skills through robotics competitions. As part of participation in this study, I understand two survey-style online assessments, approximately 10 minutes each, will be submitted and the data will be analyzed only by LTU researchers. I understand that my student will not receive any direct benefit from participation in this study, and that participation is voluntary. I also understand that my student may withdraw at any time from this study. I understand that personally identifiable data will not be used in reports or presentations of the findings of this research, i.e. the assessment results are completely anonymous. I have read and understand this information and agree to participate in this study. I know this form can be obtained from the Robofest

Privacy Policy, Consent and Media Release Form

home page at www.robofest.net. For questions or concerns about the research, please contact Dr. CJ Chung, Professor, De
concerns about your treatment as a research participant, please contact the Institutional Review Board (IRB) at LTU, IRB@ltu.edu

Last updated 2018-10-03 01:20

Please fill out the following information

Name **Jane Smith**
Contact coach to update player name

Address

City:

State:

Country:

Zipcode:

**Home
Phone:**

**Cell
Phone:**

I have read the informed consent information above

Update Student Information

Privacy Policy, Consent and Media Release Form

- If the coach does not have the parent's email at the time of registration, the coach can enter his/her own email address and can then forward the link to the parent OR the coach can update the parent's email and send the link at any time prior to the site freeze date

Gender	Grade	Player Email	Parent Email	Race / Ethnicity	Save
<input type="text" value="female"/>	<input type="text" value="6"/>	<input type="text" value="jsmith@xxx.com"/>	<input type="text" value="spalonis@ltu.edu"/>	<input type="text" value="Select All That Apply"/>	<input type="button" value="Save & Resend"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add New"/>	

Mentor Asst. Coach Constr. Other Email

Privacy Policy, Consent and Media Release Form

- If no electronic form is submitted, a paper form (signed by the parent) must be submitted to the hosting site during check-in on the day of the event
- Fillable PDF available on the robofest.net website
- <https://robofest.net/ConsentReleaseForm1819.pdf>

ROBOFEST **Lawrence Technological University** **Informed Consent, Release and Media Authorization Form**
REQUIRED FOR ALL PARTICIPANTS

This form is for (Check one): Student Coach Volunteer

Coach/Team ID: _____ Team Organization Name: _____

Print Participant Name (full legal name): _____ Age (If under 18): _____

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1. I, the Participant (or parent/guardian if student is under 18 years of age), agree that participant data will be used for Robofest programs such as printed participation certificates and personalized medals. These materials may not be personalized if consent is not given. More information about your rights as a data subject are explained in our Privacy Policy at <https://www.robofest.net/2018/LTU-Robofest-Privacy-Policy-v2.1.pdf>. For other questions about privacy, and options for reviewing or removing your data, please contact robofest@ltu.edu.
(_____) Initials
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(_____) Initials
3. I, the Participant (OR parent/guardian if student is under 18 years of age), being fully cognizant of the risks in participating in an Event, hereby assumes the risks of bodily injury and property damage, inherent in such participation. I hereby waive any claims or causes of action which I may now or hereafter have against Robofest or its Partners, arising out of my participation, and I will indemnify and hold harmless Robofest, and its Partners against any and all claims resulting from such participation.
(_____) Initials

Informed Consent for Participation in Assessing the Impact of Autonomous Robotics Competitions in STEM Education – This applies to ONLY STUDENT PARTICIPANTS

On behalf of the STUDENT PARTICIPANT, I authorize participation in the Assessing the Impact of Autonomous Robotics Competitions in S.T.E.M. Education conducted by LTU, 21000 W. Ten Mile Rd, Southfield, MI, 48075, USA. I understand this research is a study to quantify students' improvements in Science, Technology, Engineering, and Mathematics skills through robotics competitions. As part of participation in this study, I understand two survey-style online assessments, approximately 10 minutes each, will be submitted and the data will be analyzed only by LTU researchers. I understand that my student will not receive any direct benefit from participation in this study, and that participation is voluntary. I also understand that my student may withdraw at any time from this study. I understand that personally identifiable data will not be used in reports or presentations of the findings of this research, i.e. the assessment results are completely anonymous. I have read and understand this information and agree to participate in this study. I know this form can be obtained from the Robofest home page at www.robofest.net. For questions or concerns about the research, please contact Dr. CJ Chung, Professor, Department of Math and Computer Science, 248-204-3568. For concerns about your treatment as a research participant, please contact the Institutional Review Board (IRB) at LTU, IRB@ltu.edu.
(_____) Initials

Participant Address: _____

City: _____ State: _____ Country: _____ Zip: _____

Phone: _____ Email (optional): _____

Signature of Participant: _____ Date: _____
(If Participant is under 18 years of age, Parent/Guardian (full legal name))

Updated 9/28/2018

Team Registration Deadline

- Site will be frozen to updates **10 calendar days before** the qualifier competition date (some sites may be longer to allow for cross country/international shipping)
- Coaches are notified of **Freeze Date** multiple times via email and on the Site's web page
- 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 available qualifying site (Michigan); or teams can compete via Video Qualifier

Division Age Waiver Requests

- Coaches complete a *Division Age Waiver Request* on-line if the team member is outside the age for that division:

Team Members (at least one)

First Name	Last Name	Gender	Grade	Player Email
<input type="button" value="Delete Player Jane"/>				
<input type="text" value="Jane"/>	<input type="text" value="Smith"/>	<input type="text" value="female"/>	<input type="text" value="under5"/>	<input type="text" value="jsmith@xxx.com"/>

Division Age Waiver Request Required
See section 2.A of the [general rules](#) for details.

Age	Grade	Why should this student play above or below division grade level?
<input type="text" value="9"/>	<input type="text" value="4"/>	<input type="text" value="Attended Summer Camp for Robotics"/>

If playing up, the student must have exceptional talent in construction of the robot and computer programming, and has the ability to set up, solve problems and contribute to their team during the competition.

I certify that the above information is correct.
I also certify that the student has maturity to work with other team members and that I have obtained consent from other team members and their parents regarding participation of the above student.

Division Age Waiver Requests

- Robofest office will review the application
- Robofest will respond to the coach via email with approval or disapproval
- Usually, playing up from Junior to Senior division is permitted

Registration FAQ

- Can a coach register multiple teams at a single 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 at one site?
 - Yes, but not in the same category
 - For example, a student can participate in **Game** as well as **BottleSumo**

Registration FAQ

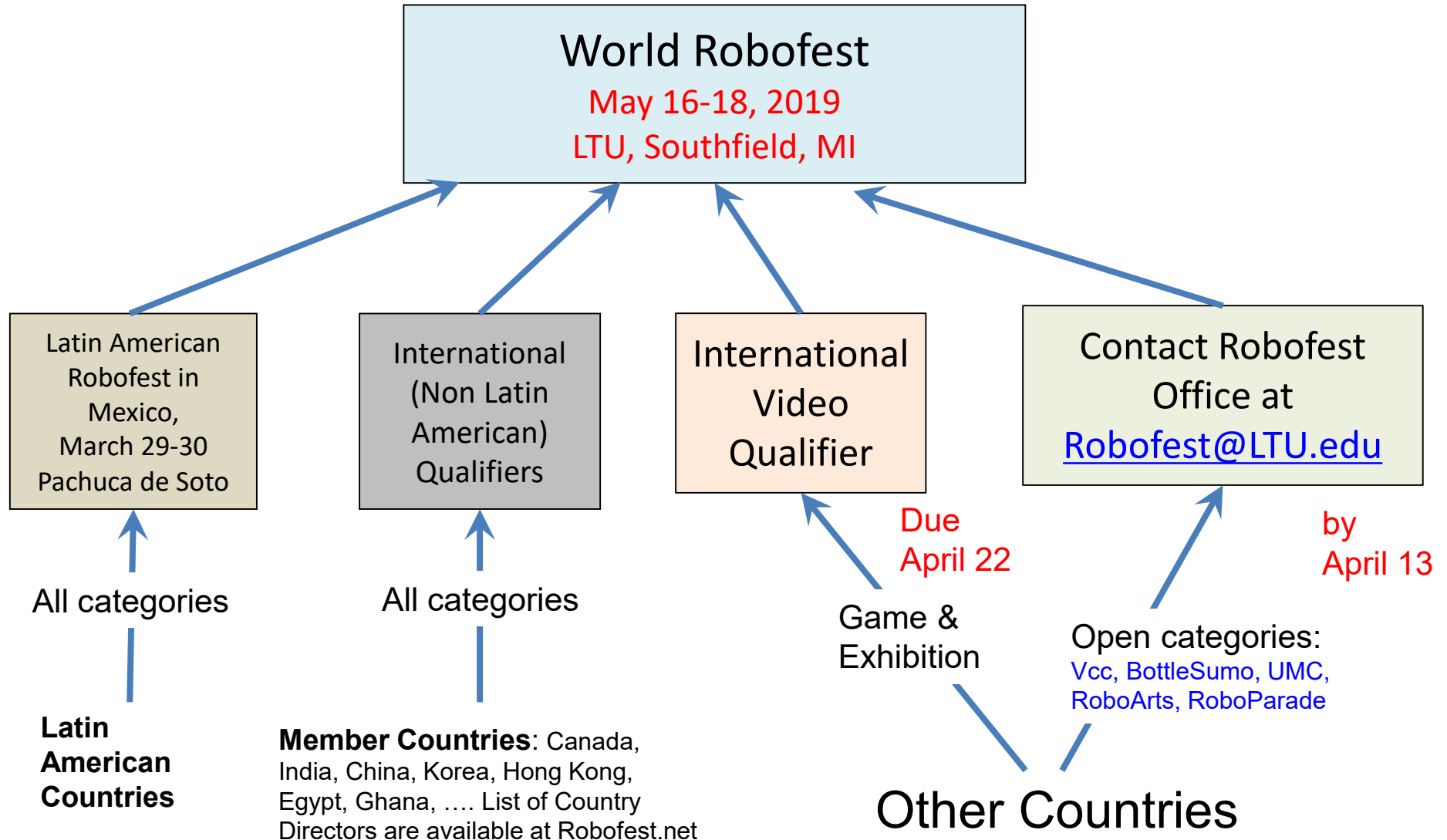
- Can a team register at multiple qualifying sites?
 - Game Teams in Michigan who would like a second chance to qualify for World Championship can register for Michigan Invitationals (create a new team number, new registration fee)
 - Exhibition Teams in Michigan as well as Game and Exhibition Teams in other US states who would like a second chance to qualify for World Championship can register for Video Qualifier (new team number, new registration fee)

Advancing to World Championship

Advancing to World Championship International Teams

- International Game, Exhibition and Open Category teams in Member countries will compete at Member Country Qualifiers
- Qualified teams will be advanced to the World Championship through the Director
- International Game and Exhibition teams in other countries may compete via International Video Qualifier Submission
- International Open Category teams in other countries can register directly for the events
- Questions? Contact Robofest@ltu.edu

How to participate in World Robofest – International (non-USA) Teams



Advancing to World Championship Non-Michigan USA Teams

- Trophies are presented to 20% of participating teams
- All Game and Exhibition trophy winners of the US Non-Michigan Qualifying competitions will compete in a “Virtual Regional” for an invitation to the World Championship
- Winning Game scores will be submitted by site hosts (teams do nothing)
- Winning Exhibition teams must prepare a video of their exhibition presentation/demonstration and the coach must upload a link to the video to the team’s registration site by 11:59 pm Monday, **April 22**

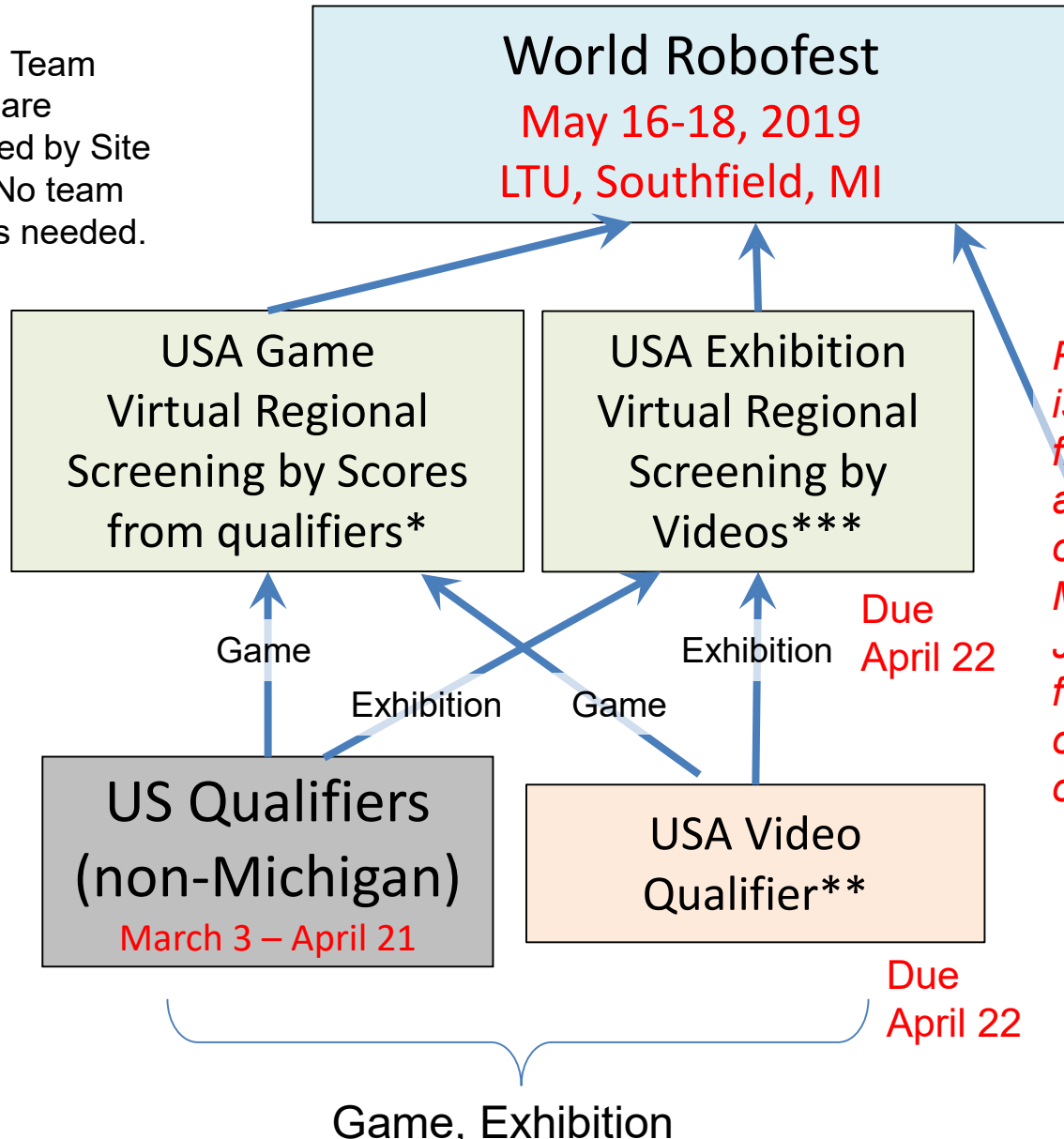
Advancing to World Championship Non-Michigan USA Teams

- The total number of Game and Exhibition teams advancing from the Virtual Regional to the World Championship will be decided by the team's scores.
- **Game and Exhibition** Teams who did not win a trophy at a US Non-Michigan Qualifying competition, and would like a second chance to qualify for World Championship can register to compete again through **Video Qualifier** (new team number, new registration fee, Deadline **4/22**)
- Game and Exhibition Teams earning an invitation to World Championships will be notified via email from Robofest World Headquarters Friday **4/26**

How to participate in World Robofest – Non-Michigan USA Teams

* Game Team Scores are submitted by Site Hosts. No team action is needed.

*** Exhibition Teams must record video and post link on team page at Robofest.net



Due April 22

Due April 22

Registration is first come, first served and will be opened in March, 2019. Join eNews for notification of exact date of opening.

**Teams are permitted to re-compete through USA Video qualifier, if not satisfied with qualifying results. Must re-register with a new team ID.

Open categories:
Vcc, BottleSumo, UMC, RoboArts, RoboParade

Advancing to World Championship

Michigan Game Teams

- Trophies are presented to 20% of participating teams
- All Trophy-Winning **Game** teams from each Michigan Qualifying competition will automatically advance to the Robofest World Championship
- **Game** teams who do not win a trophy from a Michigan Qualifying competition, and would like a second chance to qualify for World Championship can register to compete again at one of the **Michigan Invitational** Events to be scheduled during the month of **April 2019** at Lawrence Technological University

Advancing to World Championship

Michigan Game Teams

- Registration for Invitationals will open later in the season
- Teams must register with a new team number and pay a new registration fee to be eligible to compete. Teams will receive a Michigan Invitational Certificate and Medal of participation
- The total number of Game teams advancing from the Michigan Invitationals to the World Championship will be decided by the team's scores

Advancing to World Championship

Michigan Exhibition Teams

- Trophy Winning **Exhibition** teams from the Michigan Qualifiers will compete in the “Virtual Regional”
- Teams must prepare a video of their exhibition presentation/demonstration and upload a link by **4/22**
- Non-Winning Teams who would like a second chance to qualify for World Championship can register to compete again through **Video Qualifier** (new team number, new registration fee, Deadline for video submission **4/22**)
- Exhibition Teams earning an invitation to World Championships will be notified by via email **4/26**

How to participate in World Robofest – USA Michigan Teams⁺

+ Michigan teams may also compete via USA Video Qualifier

World Robofest
May 16-18, 2019
LTU, Southfield, MI

*** Exhibition Teams must record video and post link on team page at Robofest.net

Michigan Invitational Qualifiers
April

USA Exhibition Virtual Regional Screening by Videos***
Due April 22

Registration is first come, first served and will be opened in March, 2019. Join eNews for notification of exact date of opening.

Trophy Winning Game Teams

Game

Exhibition

Michigan Qualifiers
March 3 – April 13

Open categories: Vcc, BottleSumo, UMC, RoboArts, RoboParade

Game, Exhibition

2019 Qualifying Sites for Game/Exhibition

- Complete list at robofest.net → Registration
- United States: MI, FL, HI, IL, IN, **NM**, US Video Qualifier, CA, MA, MN, MO, OH, OR, TX, WA, ...
- International Sites: Canada, China, Egypt, **Ethiopia**, Ghana, Hong Kong, India, Korea, Lebanon, Macau, **Malawi** Mexico (**Latin America**), Morocco, **Nigeria**, South Africa
- International Video Qualifier teams from Colombia, France and Italy...
- *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 link to the team's video on the team's registration page (emails not accepted)
- All videos must be *received* by Monday, **April 22, 2019** 11:59pm Eastern Time
- **Late submissions will not be accepted**

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 presented at World Championship or shipped to the coach if the team does not attend



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: \$1.00 per certificate plus shipping and handling
- Order forms and pricing information will be available on robofest.net

Robofest 2019 Kick-off Informational Meeting Agenda

I. Overview

II. Schedule

III. 2019 Registration and How to Advance

IV. Open Competition Categories

V. Rules for Each Main Competition Category

VI. Q & A

2019 Open Competition Categories

- Open competitions - do not require a qualifying competition except in partner countries
- Some US sites host open categories – no advancing, lower registration fee possible
- All Competitions will be held during World Championship, May 16, 17 and 18, 2019
- World Championship Open Category Registration will open in on April 1, 2019
- First come, first served. Space is limited. Register and pay registration fee early!

2019 Open Competition Categories

- Registration fee per team at World Championship events: \$50
- Fee covers participation medals, certificates, winner's trophies, Dinner on Friday, May 17, etc.
- World Championship Daily Schedule is available: go to robofest.net → Get Involved → World Championship

RoboParade

- Robots are constructed and programmed by student participants to follow the parade route, detect other vehicles, stop and start without human help
- Jr. Division - expanded to include 4th Grade (no waiver needed)
- Perfect for beginners
- Max team size: 5
- 2019 WC Event Theme: “The Past, Present and Future of Transportation”
- Rules: robofest.net → Get Involved → RoboParade

ROBOParade

BottleSumo

- Be the first robot to intentionally push a bottle off the table OR be the last robot remaining on the table
- Jr. Division – Only LEGO NXT, LEGO EV3, and VEX IQ
- Sr. Classic Division: Only LEGO NXT, LEGO EV3, and VEX IQ
- Sr. Unlimited Division- Any robot platform
- Max team size: 3
- New size and weight requirements for 2019 – Very important to check if re-using robots
- Rules: robofest.net → Get Involved → BottleSumo

BOTTLESUMO

Unknown Mission Challenge (UMC)

- Missions are completely unknown until day of challenge
- Jr. and Sr. Divisions
- Lego NXT, Lego EV3 or Vex IQ (New for 2019)
- All robot components must be un-assembled at the beginning of the competition
- Max team size: 3
- Rules: robofest.net → Get Involved → UMC

The logo for the Unknown Mission Challenge (UMC) is displayed in a large, bold, blue, sans-serif font. The letters are thick and blocky, with a slight shadow effect behind them.

Vision Centric Challenge (Vcc)

- Vision based robot navigation challenge
- Senior (Advanced High School Students) and College Divisions
- Advanced competition
- Max team size: 3 for Senior, 2 for College
- 2019 Challenge: “**S-SLAM (Simple - Simultaneous Localization and Mapping)**”
- Rules: robofest.net → Get Involved → Vcc

The logo for the Vision Centric Challenge (Vcc) is displayed in a large, bold, green font. The letters 'V', 'c', and 'c' are all lowercase and have a slightly rounded, modern appearance.

RoboArts

- Similar to Exhibition, but projects are specifically focused on the visual and performing arts
- Jr. and Sr. Divisions
- Max team size: 5
- Rules: robofest.net → Get Involved → RoboArts

ROBOArts

Team Photo Contest

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



Some 2018 Winners

Robofest 2019 Kick-off Informational Meeting Agenda

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Qualifying Competitions

Competition Category	Age Division	Team Size	Robot	Unknown Factors
Game	Jr. & Sr.	Max 5	Any	Yes
Exhibition	Jr. & Sr.	Max 5	Any	Lighting Condition

Team Registration Fee: \$50

(Includes participation medals, certificates, and winners trophies)

Exhibition

Exhibition

- Complete freedom to show off any type of creative intelligent robotics project - Robotics Science Fair
- No Recommended Theme
- Must employ sensors
- Human to Robot, Robot to Robot interaction strongly encouraged
- Wireless program controlled remotes are allowed only if the program of the remote controller is written by students
- Space for project is limited to **64** square feet including a 6ft or 8ft table

Exhibition

- Four minutes are given for an official presentation including demonstration. Team is responsible for keeping the time
- Teams should not ask Judges to be a part of the official demonstration
- Sharing online videos (such as YouTube) is highly recommended prior to Qualifiers so judges can prepare questions – Upload to team registration page
- Examples: Visit robofest.net → Prior Years → Prior Year Exhibitions

Exhibition

Judging

- **Judging Rubric:** go 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
- Site Hosts may utilize Judging App to streamline judging and reduce errors

Exhibition

Judging Rubric (1 of 2)

5: <u>Strongly Agree</u>	excellent, outstanding, advanced, exemplary, or amazing
4: <u>Agree</u>	good, accomplished, or proficient
3: <u>Neutral</u>	average, intermediate level, or acceptable
2: <u>Somewhat Disagree</u>	attempted but needs work
1: <u>Disagree</u>	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	Project presentation was clear, well organized, and delivered effectively within the allowed time.	8%	
	Information on the team poster, brochure and signage was clear, well designed, and able to be understood even by robotic novices. Project remained within allowed size parameters.	4%	

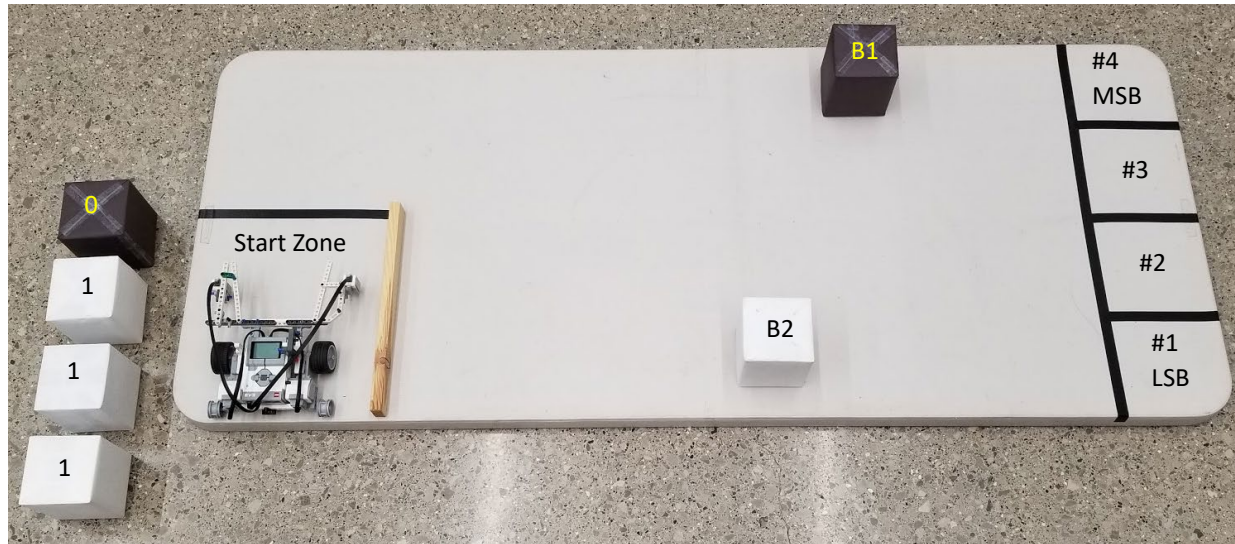
Exhibition

Judging Rubric (2 of 2)

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. <i>Note: If the team only has one member, the score should be 1.</i>	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%	

GAME

2019 Game BinaryBlocks



2019 Game – BinaryBlocks

Mission

- Develop an autonomous robot that:
 - Arranges white and black blocks to represent a 4-bit binary number of a target decimal number
 - Stacks additional blocks on top of the first same color block from the left
 - Completes all the tasks autonomously within 2 minutes without any external help
- Points are earned based on final location of the blocks and the robot
- At the World Championship, additional unknown task(s) will be added

2019 Game - BinaryBlocks

Documents and Videos Available

Documents:

- Official Game Rules
- Judging Score Sheet
- Sample Unknown Factors
- Site Host Procedures and more...

Videos:

- Examples with different scores: [Example Video](#)

Go to robofest.net → Get Involved → Game

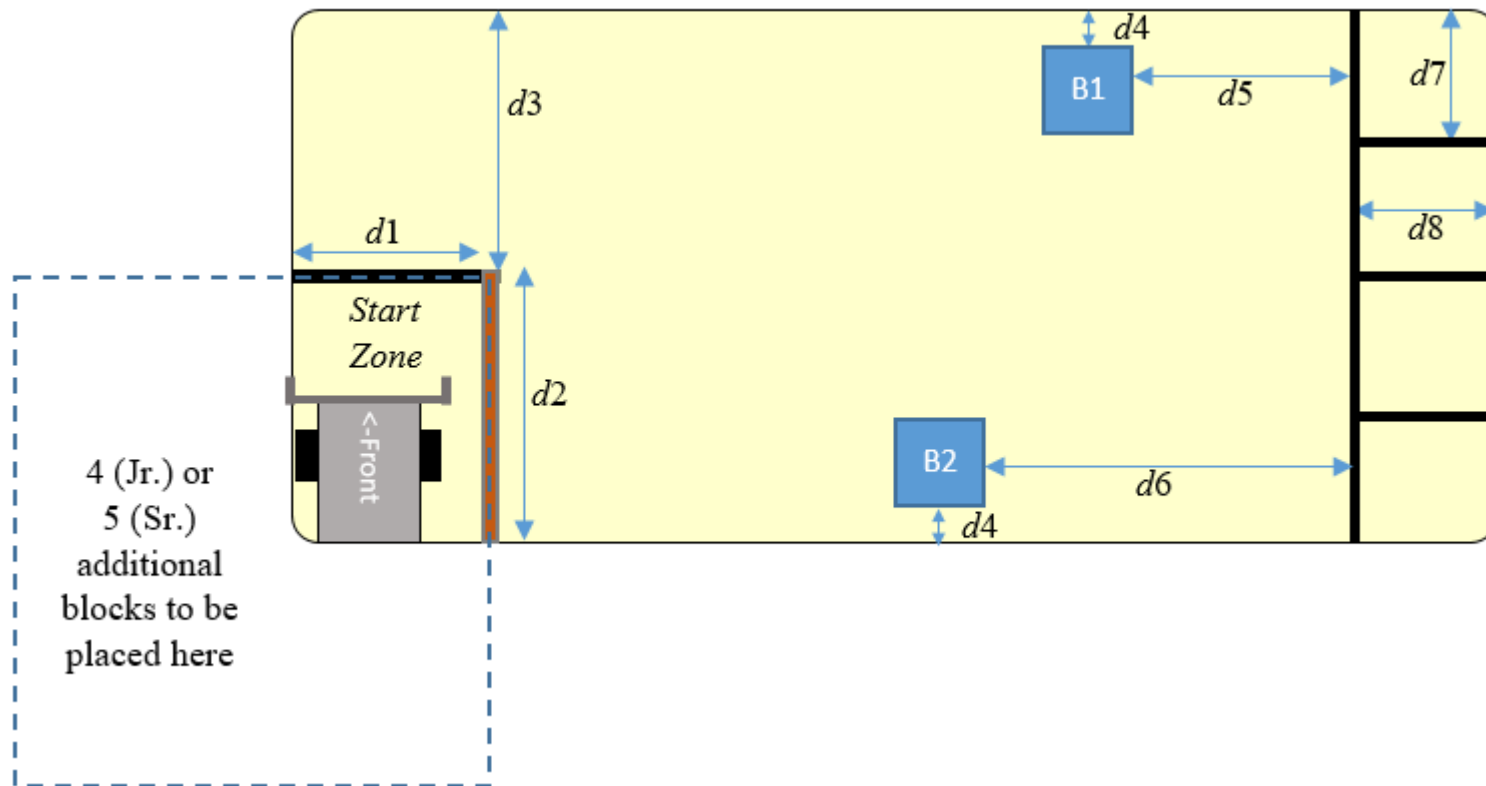
2019 Game - BinaryBlocks

Unveiling Unknown Factors and 30 minute work time

- Unknown Factors on **Day of competition**:
 - Facility lighting condition, table (exact size, color, and texture), blocks (exact size, weight, paper shade and texture), etc. are unveiled at the competition
 - “Game-Ending-Mission,” unveiled just before the 30 minute work-time for each round
- 30 minute work-time: teams are to adjust the robot, change the code, and add programs for the Game-Ending-Mission
- 5 minutes before the work time: All people except contestants and authorized staff/volunteers will be evacuated from the pit/room
- Robots are impounded at the end of the 30 minutes and remain until all robots have completed the round

2019 Game - BinaryBlocks

Playing Field Diagram



2019 Game - BinaryBlocks

Field Dimensions/Unveil Times

	Min. value	Max. value	Unveiled when?	Note
<i>d1</i>	35cm	35cm	Known factor	Inside of the wall (wood block)
<i>d2</i>	35cm	35cm	Known factor. Fixed to 35cm	Edge to edge distance
<i>d3</i>	(Table width) – <i>d2</i>			Around 40 cm
<i>d4</i>	3cm	5cm	Unveiled after impounding	
<i>d5</i>	35cm	50cm	Jr: Unveiled before work-time for each round.	
<i>d6</i>	35cm	90cm	Sr: Unveiled after impounding	
<i>d7</i>	(Table width – 1.9*3) / 4			Around 17.3cm
<i>d8</i>	19 cm		Known factor	

2019 Game - BinaryBlocks

Starting a Round

- **How to start a Game and Deliver Blocks**
 - The entire robot must be inside the Start Zone
 - If the robot has to push or carry “Start Zone” blocks, both the robot and block must be completely inside the Start Zone
 - A human player may load a block on the robot or place it on the table surface of the Start Zone
 - When the robot returns to the Start Zone (all the parts of the robot that touch the table surface completely pass the outside edge of the Start Zone line and no parts of the Robot are touching the floor (off the table) a human player may touch, pick-up, select different program, and re-orient (turn) the robot
 - The robot does not need to self-stop

2019 Game - BinaryBlocks

Ending a Round

- **How to end a Game**

- Unveiled before the 30 minute work-time for each round
- An example of the Game-Ending-Mission is for the robot to **stop** at the Start Zone line - any part of the robot must be on or over the black line
- Game competition time will be recorded only if all the other missions as well as this Game-Ending-Mission are perfectly completed
- World Championship Game-Ending-Mission will be more challenging than that of qualifying competitions

2019 Game - BinaryBlocks

Violations

- **Violations that require a contestant to pick-up the robot: Pick-up penalty**
 - A human player touches the robot intentionally or unintentionally when the robot is not inside the Start Zone
 - If a human player touches any field material (except Start Zone Blocks) intentionally or unintentionally
 - If additional blocks are placed on the table by the human player outside the Start Zone
 - If a block is placed in the Start Zone, when the robot is not inside the Start Zone

2019 Game - BinaryBlocks

Violations-Pick Up

- If one of the violations listed on the previous slide occurs, the judges will announce “violation”, and give the team the option to either:
 - A. Restart inside Start Zone (with **pick-up** penalty).
 - At that time, the team may request one time full-reset (**full-reset** penalty) or continue as is (without full reset penalty) or
 - B. Declare **end of the run**

2019 Game - BinaryBlocks

Violations-Pick Up

- **Robot drops off the table: Pick-up penalty or No Penalty**
 - If the team picks it up to restart, then a “pick-up” penalty will be applied
 - There will be no penalty when the robot drops off the table and the team declares the end of the run
 - There is no double penalty if the robot drops off the table and is picked up

2019 Game - BinaryBlocks

Violations-Full Reset

- **Full-reset penalty**
 - The team may request a complete full-reset at any time during the run
 - If the full-reset is requested when the robot is inside Start Zone, only full-reset penalty will be applied
 - If the robot is picked up and full-reset is requested, then both pick-up and full-reset penalties are applied

2019 Game - BinaryBlocks

Violations-Full Reset

- Only one complete full-reset of the playing field is allowed for a run
 - Full-reset is done only by Judges while the 2-minute countdown timer continues to run. Judges shall reset as quickly as possible
 - A full-reset penalty is assessed as defined on the scoring sheet
 - A partial reset (for example resetting one block) is NOT allowed
- When the field is full-reset, all the points earned from the previous attempt are lost (cleared)
- A team may repair their robot and/or select a different program during the full-reset. The 2-minute countdown timer continues to run

2019 Game - BinaryBlocks

Robot Specifications (Junior and Senior Division)

- A label with Robofest Team ID and Team Name on top of the robot is required
- At the start, the robot's maximum width and length - **including any parts that are attached during a run** are each **35cm**. However, after the round starts, the robot may autonomously expand its width and length dimension up to **50cm**. There is no height limitation
- Weight limitation: none
- Any number of sensors/sensor types (unless it is harmful to humans)

2019 Game - BinaryBlocks

Robot Specifications (Junior and Senior Division)

- Any number/type of motors/servo motors (multiplexor is OK to use)
- Any material/robot kit may be used to construct your robot including tape, glue, nuts and bolts, rubber bands, etc.
- The robot or part of the robot may not use the game elements. For example, do not use a black or white covered tissue box as part of the robot

2019 Game - BinaryBlocks

Difference between Junior and Senior Divisions

	Junior (5 th ~ 8 th grades)	Senior (9 th ~ 12 th grades)
Game-Ending-Mission	Easier	Harder
Colors of B1 and B2	Unveiled before work-time	Unknown. Unveiled after impounding
# of blocks to stack on another	2	3
<i>d5, d6</i>	Unveiled before work-time	Unknown. Unveiled after impounding
Number of on-board computer controllers	One	No limit

2019 Game - BinaryBlocks

Score Sheet (1 of 2)



Judging Items (to be checked when the Game is ended)		Check / Count		Point Value (per count)	Score Earned / Lost
Bit Slot #4 (MSB)	Correct color block completely in	0 (no)	1 (yes)	15	} <i>Max. 15</i>
	Correct color block partially in*	0	1	8	
	Incorrect block is completely or partially in*	0	1	4	
Bit Slot #3	Correct color block completely in	0	1	15	} <i>Max. 15</i>
	Correct color block partially in*	0	1	8	
	Incorrect block is completely or partially in*	0	1	4	
Bit Slot #2	Correct color block completely in	0	1	15	} <i>Max. 15</i>
	Correct color block partially in*	0	1	8	
	Incorrect block is completely or partially in*	0	1	4	
Bit Slot #1 (LSB)	Correct color block completely in	0	1	15	} <i>Max. 15</i>
	Correct color block partially in*	0	1	8	
	Incorrect block is completely or partially in*	0	1	4	

2019 Game - BinaryBlocks

Score Sheet (2 of 2)

Jr	# of correct block(s) stacked on a correct base block**	0 1 2	12	
	# of any other stacked block(s)	0 1 2	9	
Sr	# of correct block(s) stacked on a correct base block**	0 1 2 3	8	
	# of any other stacked block(s)	0 1 2 3	6	Max. 24
# of blocks that are on the floor or touching the floor***		0 1 2 3	3	Max. 9
The robot was sturdy & remained intact throughout the run		0 1	3	Max. 3
A full-reset was done (full-Reset penalty) <i>Note: partial reset is not allowed</i>		0 1	-3	
Number of pick-ups outside Start Zone (pick-up penalty)****		0 1 2 3	-1	
Game-Ending-Mission is achieved		0 1	13	Max. 13
(*) the block must be on the table surface, not touching the floor (**) Receives full points only when the base block gets 15 (<i>perfect points</i>) (***) Only up to 3 blocks can get points (****) <u>4th pickup</u> automatically ends the run		Total Score		Max. 100
		Time left in seconds <i>Time stops when the robot complete the Game-Ending-Mission. Total score must be 100, otherwise BLANK</i>		

Example Scoring

	4 3 2 1	Case 1: Perfect score $15+15+15+15+$ $12*2+3+13 = 100$
		Case 2: $8+15+15+15+$ $9*2+3+13 = 87$ Base Block is not completely in the slot #4

Please read all the examples in the rules document

2019 Game - BinaryBlocks

Game Field Kits – Available for Purchase

- Robofest office J-233 in Dec ~ Feb.
 - \$10.00 Junior
 - \$11.00 Senior
 - Plus Shipping and Handling
 - Kits may be picked up in the Robofest Office J233
 - The kits consists of 6 (Jr.) or 7 (Sr.) Blocks, Wood Bar (Wall) with VELCRO or Dual-Lock tape, roll of electrical tape.
- To order: Email spalonis@ltu.edu (best way) OR call 248-204-3568
- Robofest Office will ship official Game kits to each Site Host (as listed in site host Letter of Agreement)

2019 Game - BinaryBlocks

FAQ

- A. Block height size is different from width and length. Can a block be placed or stacked on its side, not the tall way? *Yes.*
- B. Can the robot bring B1 and B2 blocks to the Start Zone and then player can load on/to the robot? *Yes. Then the block becomes the same as the block at the Start Zone.*
- C. Can teams modify the robot and add additional structure when the robot is at the START Zone? *Yes, but no additional time will be provided. Must be measured as a starting configuration and impounded with the robot*
- D. Can dead controller bricks be added to add weight for traction or a counter balance? *Yes, but you should not connect to any sensors or motors.*

2019 Game - BinaryBlocks

FAQ

- E. If the bot brings B1/B2 to the start and I decide to load onto it, can I load more than one or I will have to load the first one, go out of the start zone, return, and load the 2nd? *A block can be brought back to the Start Zone and then handled by the player, but additional blocks cannot be stacked on top of the first because the robot can leave the Start Zone with only one block. It is permissible, however, for the robot to autonomously stack blocks just outside of the Start Zone, then move the stack to a slot.*

2019 Game - BinaryBlocks

FAQ

- F. Expansion – If the robot tips over, does it need to be within the 50x50 cm limit? – *The robot will be measured in the upright position and the team member will be asked to demonstrate any expansion. If tipping over is part of the functionality of the robot, it is considered expansion and any expansion must meet the 50x50 cm max.*
- G. Please clarify stacked block scoring. *Full points are received for the correct colored stacked block when bottom block is the correct color and completely in the slot. Partial points will be earned for any other stacked block (the bottom block is the incorrect color or partially in the slot, or the stacked block is the incorrect color).*

2019 Game - BinaryBlocks

FAQ

- H. Can students have Binary Code chart or a Robot Program “Cheat Sheet”? – *Yes, the chart can be on the robot, too. However, it cannot be electronic (No cell phones or electronic communication in the pit)*
- I. If the robot falls off the table and is carrying a block, and the block remains on the robot, can the team return the block to the Start Zone and keep it in play? *No, any blocks on the robot if it is picked up will remain on the floor where the robot fell off the table.*
- J. Does it matter where the block is when it is pushed off the table? If the block is pushed off when the robot is still in the Start Zone, is it still in play? *No, any blocks pushed off the table are considered as “played” and cannot be returned to the start zone unless a full reset is selected.*

2019 Game - BinaryBlocks

FAQ

- K. Can one block be scored for two slots if it is the only block in both slots? *Yes, each slot will be scored accordingly. See the scoresheet.*
- L. Can a team bring it's own blocks? *Site blocks will be used for the competition. Own blocks can be used for practice only.*
- M. Can controllers be “daisy-chained” (moved together)? *Junior teams can only have one controller. Senior teams may daisy-chain.*
- N. Does the robot have to come to the starting zone? *To retrieve a new block or to physically touch/adjust without penalty the answer is yes. The end task will vary and will be unveiled at each competition.*

2019 Game - BinaryBlocks

FAQ

- O. How many blocks can be on the floor or touching the floor? *Up to three blocks can get “on the floor” or “touching the floor” points. One block positioned half on the table & half on the floor counts as one point. Anywhere on the floor counts (Does not need to be adjacent to a slot).*
- P. Will there be exactly 2 black blocks for every number choice, Limiting the numbers to 3,5,6,9,10 and 12? *No, there can be any combination of black and white blocks.*
- Q. How many pickups are allowed during the run? *Only 3 pickups are allowed during the run. (See scoresheet) A 4th pickup will end the run.*

2019 Game - BinaryBlocks

FAQ

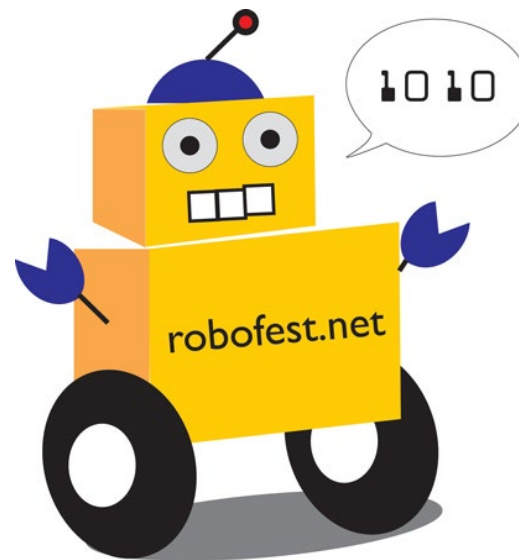
- R. If a robot unintentionally comes apart or loses a piece during the run, the team is allowed to repair it during a pickup in the Start Zone, a pickup or a full reset. If this happens, how will the robot be scored for “robot remains intact throughout the run”? *The team will receive a “0” for the robot remaining intact.*

2019 Game - BinaryBlocks

FAQ

Questions?

Thank you!



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

join the Robofest eNews list at robofest.net!