20th Annual ROBOFEST 2019 General Rules

1026/2018   v1.1   US Kickoff Version

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Forms attached:

- o Consent, Release and Media Authorization Form can be completed electronically during the registration process or submitted hard copy:
  https://robofest.net/ConsentReleaseForm1819.pdf

Video Submissions and Age Waiver requests will be managed online in the registration system for the 2018/2019 season.

1 Introduction and Competition Summary

Robofest® is an annual robotics competition designed to promote and support Computer Science and STEM (Science, Technology, Engineering, and Math) learning through autonomous robotics. Robofest is an open competition, allowing teams to use any type of robotics platform and any programming language for the categories shown in **Table 1**.

Competition Category	Age (Grade*) Divisions	Team Size	Plat-form	Unknown Factors	Reg. Fee**	Note
Game	Jr. (5th-8th) & Sr. (9th-12th)	Max. 5	Any	Partially unknown	$50	Each team uses a fully autonomous robot to play this year's game, **BinaryBlocks**.
Exhibition	Jr. & Sr.	Max. 5	Any	Lighting Conditions	$50	Each team has complete freedom to show off a creative autonomous robotics project.

(*) School Grade in spring 2019.
(**) Per team. No refunds will be given; some qualifying sites may charge an additional Site Check-in Fee; Sites outside USA may have different fee schedules.

(Table 1) Robofest 2019 Main Competition Categories

Robofest also provides the following "Open" competition categories that are conducted at some local sites as well as during the World Championship at Lawrence Technological University in Southfield, MI on May 16, 17, and 18, 2019. Detailed information about World Championship can be found in Section 15.

"Open" means any team from around world (except from Member Countries) may register online as long as space is available, with no qualification necessary. Categories, Age Division and other details about the Open categories are shown in **Table 2**.

Competition Category	Age (Grade*) Divisions	Team Size	Platform	Unknown Factor	Reg. Fee**	Note
Vision Centric Challenge (Vcc)	Sr. (9th-12th)	Max. 3	Any vision-based robot	Partially unknown	$50	For talented high school and college students.
	College	Max. 2	Any vision-based robot	Partially unknown	$50	Competitions will be held at the World Championship.
BottleSumo	Jr.	Max. 3	LEGO NXT, EV3 or VEX IQ	Partially unknown	$50	Various locations and World Championship
	Sr. Classic	Max. 3	LEGO NXT, EV3 or VEX IQ	Partially unknown	$50	Various Locations and World Championship
	Sr. Unlimited	Max. 3	Any	Partially unknown	$50	World Championship
Unknown Mission Challenge (UMC)	Jr. & Sr.	Max. 3	LEGO NXT, EV3 or VEX IQ	Fully unknown	$50	World Championship
RoboParade	Jr. (4th-8th)	Max 5	Any	Lighting Conditions/ Route	$50	Various Locations and World Championship
RoboArts	Jr. & Sr.	Max 5	Any	Lighting Conditions	$50	Various Locations and World Championship

(*) School Grade in spring 2019   (**) Per team. May be different for Local events. No refunds will be given

(Table 2) Robofest 2019 Open Competition Categories

2 General Team Rules

A. Team Formation
1. Any organization such as a school, home school, civic organization, club, etc. can form teams.
2. Grade Level Divisions for each competition category are indicated in Tables 1 and 2. Grade levels denote the student's grade as of spring, 2019.
3. For any exceptions in a student's grade, the coach must complete the online "*Age Division Waiver Request*" at the time of registration.

a) The general rule is that playing up from lower grades into Jr. Division and from Jr. Division to Sr. Division is allowed as long as the student has 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. Examples must be specified on the request.

b) Playing down is discouraged in general. The reason to request playing down must be specified on the request.

c) For either playing up or playing down, coaches should obtain consent from their entire team and their parents and agree to the provisions of the waiver. Robofest will notify the coach of the age waiver decision.

4. A team member may join multiple teams *in other competitions, not in the same category*. For example, a student can join a Game team and an Exhibition team. When a coach has multiple game teams, a student can join only one game team.

5. A team cannot register at multiple qualifying sites; except for US Exhibition teams (see Section 8).

B. Team Registration

1. Registered Robofest Coaches register teams; a coach may have multiple teams using the same coach ID #.

2. Team registration is managed online at www.robofest.net. See Section 4 "Registration Process" for the registration steps.

3. The registration deadline is 10 days before the competition date at each site. If a competition category at a site does not have 5 teams or more, teams already registered at a site that is canceled *can request* to move to another site if one is within a reasonable distance or teams can enter via Video Qualifier submission (see Section 8).

4. There may be an additional Site Check-In fee at a qualifying competition site, which will be used solely by the competition host site. Each qualifying site web page specifies the fee amount under "Site Check-In Fee".

3 Team Coach Rules

A. Coach Qualifications and Roles

1. Coaches must be adults with no criminal record.

2. Coaches must sign and abide by the Coach's Pledge (Section 17).

3. The coach must have a valid email address and must check the email account regularly. Email is the primary and official communication method between the Robofest organizer and the team. If a coach's email address is changed, it is the coach's responsibility to update the email address in the Robofest registration system by logging into the coach's Robofest account. To confirm an email address change, the system will send the coach a confirmation email. The coach will need to confirm by clicking on a link in the confirmation email.

4. Robofest 2019 has multiple qualifying competition sites. A coach using a single coach ID may register **different** teams for multiple qualifying sites.

5. The coach is responsible for entering and updating team information at least **10** days before the competition. Note that each team member's personalized certificate and participation medal will be printed based on the information the coach enters on the website. Robofest will charge to reprint items due to incorrectly entered information.

6. Team coaches must coordinate pre- and post-assessments (or surveys) online to help Robofest administration gather data regarding the students' learning of STEM subjects.

7. Another important role of the coach is to find team sponsors. Team sponsors can be individuals, groups, or other organizations that donate cash, products, or in-kind services to the team. The Robofest website can list up to four team-sponsors per team on the web.

B. Coaching Teams

1. Coaches, parents, teachers or mentors may not directly assemble the robots, or write/edit the program code for the team at any time. During coaching sessions and team meetings, coaches should teach and/or provide necessary training for the team to solve the challenge problems by themselves.

2. We recommend that coaches recruit technical mentors or assistant coaches if necessary. Coaches are encouraged to contact local IEEE (Institute of Electrical and Electronics Engineers) chapters (Robofest medal sponsor), ACM (Association for Computing Machinery) chapters, engineers' societies, robotics clubs, tech companies, community colleges, or universities to find volunteer technical mentors.

3. Robofest provides some technical workshops at LTU and/or online. There are books, multimedia curriculum, and other online resources available as well.

4. The team coach is responsible for facilitating, transporting, and overseeing team members for team meetings and at Robofest competitions.

C. Consent & Media Release Form and publicity
  1. NEW for 2019 – All volunteers (site and team), coaches, and students must submit an *Informed Consent, Release and Media Authorization Form* and agree to our *privacy policy*.
       a. Coaches to agree to the Privacy Policy and Consent and Release Form online each time they register a team.
       b. Student form can be completed by the parent electronically through the registration system:
            1. On the team registration page, the coach enters a "Parent Email" for each student (student email is optional).
            2. The parent will receive an automated email with a link to complete the form online.
       c. 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.
       d. If no electronic form has been submitted, a paper form (signed by the parent) must be submitted to the hosting site during check-in on the date of the event.
            1. Fillable PDF available on the robofest.net website https://robofest.net/ConsentReleaseForm1819.pdf
  2. Before and after Robofest, please contact newspapers, radio, and TV stations to recognize your teams' efforts and achievements. Let Robofest administration (robofest@LTU.edu) know if your teams were featured in any media outlets.

4 Registration Process – Seven Steps

Step 1. **New Coaches** Submit new coach registration online at www.robofest.net. After submitting the registration form, a numeric coach ID will immediately be sent to the coach by email from *do-not-reply@robofest.net*. YOU MUST CONFIRM COACH REGISTRATION BY CLICKING A LINK IN THE EMAIL CONFIRMATION SENT TO YOU. If you do not receive the confirmation email, contact robofest@LTU.edu or 248-204-3568 to resolve the problem. An incorrect email address in the coach registration form may be the cause. Please also check your spam folder before contacting us.

Returning Veteran Coaches are encouraged to use their prior coach ID and password. If you forgot your password or ID, click on the "Forgot Password" link.

Step 2. **Team Registration** for qualifiers will begin on **November 5, 2018**. Using the numeric coach ID and password, the coach can create teams after selecting a qualifying site. During this step, the coach must accept the Robofest 2019 Coach's Pledge (Section 17).
   • Enter each team member's first name, last name, gender, grade (for exceptions to grade, see section 2.A.3), student email address, parent email address, and ethnicity.
   • Student contact information is not made public.
   • Enter each team volunteer's (other than the Head Coach) first name, last name, role and email address. (not required)
   • Enter each sponsor's name and email address. (not required)
   • Exhibition teams must enter a short project description in this step, including the theme of their exhibition, functionalities of the robots, and any other information that describes the exhibition.
   • Please register early since a competition division of a site will close when the number of teams registered reaches the maximum capacity. A division/site will be canceled if minimum registration capacity is not met 10 days prior to the event date.

Step 3. **Registration Fee Payment**: After creating all of your teams, pay the registration fee(s) online using a major credit card through PayPal. A PayPal account is NOT required to make payment. You will receive a payment confirmation email from PayPal, which can be used as a receipt.
   You may also choose the option to send a check payable to LTU Robofest to: *LTU Robofest, 21000 West 10 Mile Rd., Southfield, MI 48075, USA*. Make sure to **WRITE THE TEAM NUMBER(S) IN THE MEMO LINE OF THE CHECK AND INCLUDE A HARD COPY OF THE INVOICE PAGE FROM THE WEB WHEN YOU MAIL THE CHECK.** Your team registration will be complete once LTU receives the check.

Step 4. **Informed Consent, Release and Media Authorization Form**: See section 3.C.1. If the Consent & Release electronic form has not been submitted by the parent or guardian through the registration process, please print and send it to students' parent or guardian. Get the signed forms and turn in signed form at the event.

Step 5. **Team Photo Uploading**: Team photos can be included on the team's personalized certificates. Take a team photo and upload it to the coach account on the web. Steps are: Logon to your coach account. Click on "Upload team photos" link under Team Management on the left menu bar. Select the site and team. The photo must be uploaded before the freeze date of the qualifying competition.
       Photo Requirements:
          (1) Standard **landscape picture** file such as jpg, gif or tif (width:height ratio should be 4:3 or 16:9).

(2) Smaller file size is recommended.
(3) Must show all the team members listed.
(4) Only students should be in the picture.
(5) Must show the identifiable team ID and team name (write down or print the number on a paper and hold it when taking the photo *or* edit the photo file to add text). The team ID number is established in **Step 2** above.

Step 6. **Robot Photo Uploading**: Robot Photos can also be included on the team's certificate. Take a photo showing your team robot(s), if your team desires. Upload the photo using the coach's web account before the freeze date of the qualifying competition. The robot photo requirements are the same as in (1), (2), and (5) in **Step 5** above.

Step 7. **FINAL UPDATES**: Coaches must be sure to update any team information including *Exhibition Description* and team video link. The final update deadline is minimum **10** days before the competition date for each qualifying site (coaches will be notified). This is a hard deadline, as time is needed to print and ship all the participant certificates to each site.

5 Team Volunteers

The team cannot work without the help of various volunteers for technical mentoring, financial sponsorship, transportation, constructing playing fields, preparing food, taking pictures, videotaping, etc. The Robofest website will list up to five volunteers per team. LTU/Robofest has become a Certifying Organization for the President's Volunteer Service Award, or PVSA (www.presidentialserviceawards.gov). All Robofest team and site volunteers are encouraged to track service hours. To register, please contact Dr. Chung at cchung@LTU.edu.

6 Robofest Assessments or Surveys

We will continue to assess the impact of robotics competitions on STEM education. The purpose of the assessment (or surveys) is to quantify and analyze students' interest in STEM subjects and improvements in STEM skills through Robofest. Competitions can drive students to work harder resulting in improved skills. We believe that students participating in robotics competitions will hone STEM skills and demonstrate skills they would not have gained outside of the competitions. To test this hypothesis, we need measurable data to quantify the students' experiences. We can use this data to highlight successes and determine areas for improvement. They will be assessed before and after the competition to see the level of improvement. Another group of students who did not participate in the competition will act as a control group and take the same pre- and post- assessments. Pre-assessment/survey instruction will be sent to all coaches registered at a site. Coaches will receive post-assessment/survey instruction in April. This assessment is anonymous and results may be published in a journal on education research.

7 Team Responsibilities on Robofest Competition Day (Qualifiers and Championships)

A.   All teams must observe the check-in time set by the site host organizer.
B.   Things to bring to the Robofest venue:
1.   Robot(s), spare parts, and extra batteries (or charger).
2.   A laptop or other computer **for each team** to solve unknown factors or adjust to the lighting conditions.
3.   A power strip and power cable.
4.   *Exhibition teams*: poster boards to introduce the exhibition including a description and all the necessary materials for the exhibition.
5.   Signed Consent & Media Release forms for team members, coach, and team volunteers – *required if not completed online*.
6.   Site check-in fee, if your qualifying site charges a check-in fee. Check your site home page.
C.   General Rules during Robofest qualifier, open and championship competitions:
1.   Only team members with name badges will be allowed in the pit (team table) area.
   a.   Adults can assist with carrying in team materials, but must immediately leave the pit area.
   b.   No adults are allowed in the pit area during the work time for all qualifying categories.
   c.   Additional restrictions may apply for specific categories.
2.   The use of wireless or Bluetooth communication to interact with adults by students in the pit area is prohibited.
3.   It is strongly suggested, for security purposes, that the coaches instruct team members to close laptops when stepping away from the table to conduct a practice run.
4.   Participants must not interfere with other teams in any way.
5.   Be respectful of all teams. Do not make unnecessary noise which might disturb other teams in the pit area.
6.   No food or drink is allowed inside the competition area.
7.   No Flash photography is allowed inside the competition area.

8   Rules for Online Video Qualifier Submission

A. If there is no qualifying site near the team location, *Game* and *Exhibition* teams may register for Video Qualifier.
B. There are two separate registration sites – **International_Video_Qualifier** and **US_Video_Qualifier**. Teams are required to pay the same registration fee as on-site participating teams.
C. The Deadline for Video Qualifier Submissions is 11:59 pm Eastern time, Monday April 22, 2019.
D. The following are the suggested video contents:
   1. Start with the team ID, Team Name and team member introduction, around 5 seconds for each member.
   2. Game Teams:
      a. Demonstrate all required rounds. The video should not be edited once each round has started. You do not need to show work time.
   3. Exhibition Teams:
      a. Introduce features of the robots, around 5 seconds for each robot.
      b. Present 4-minute Exhibition Presentation. The video should not be edited once the presentation has started.
      c. Include a 2-minute question and answer session (interview–style). Coaches may prepare and ask questions.
   4. Rolling credit and/or acknowledgement (recommended).
   5. Upload the video to a video sharing site such as YouTube.
E. Adults may help produce the video. Acknowledge everyone involved in the video production in the credits.
F. The coach must upload a video link to the team's registration page.
   1. Log on to coach account.
   2. Click on "Team Video Links" on the Team Management Menu on the left menu.
   3. Select the site and team.
   4. Enter the URL for the video (URL can also be entered directly on team edit page).
G. US teams (MI Exhibition and Non-MI Game and Exhibition) will be permitted to re-compete through the USA Video Qualifier for a second chance to qualify for World Championship. Teams must re-register on the **US_Video_Qualifier** site with a new Team ID.
H. Robofest will ship participation medals and certificates to all Video Qualifier team coaches. If a winning team advances and attends the World Championship Event, any earned Video Qualifier trophy will awarded during the award ceremony for that event. If the team does not attend the Championship Event, Robofest will ship the trophy to the coach.

9   Warm-up Competition

A Warm-up competition to create videos for Game Judge Training will be open to a small number of registered teams and registered judges. The event will be held at LTU on February 16, 2019 and may or may not be open to the public.

10   Judging and Prizes

Approximately 20**%** of the total number of teams for each division at each Official Qualifying Competition site will win trophies to be presented during the award ceremony. Detailed judging rules are outlined in each category's rules. Every registered team member will receive a certificate of achievement and a personalized medal during the award ceremony of the Qualifying Competition. All teams must stay for the closing ceremony.
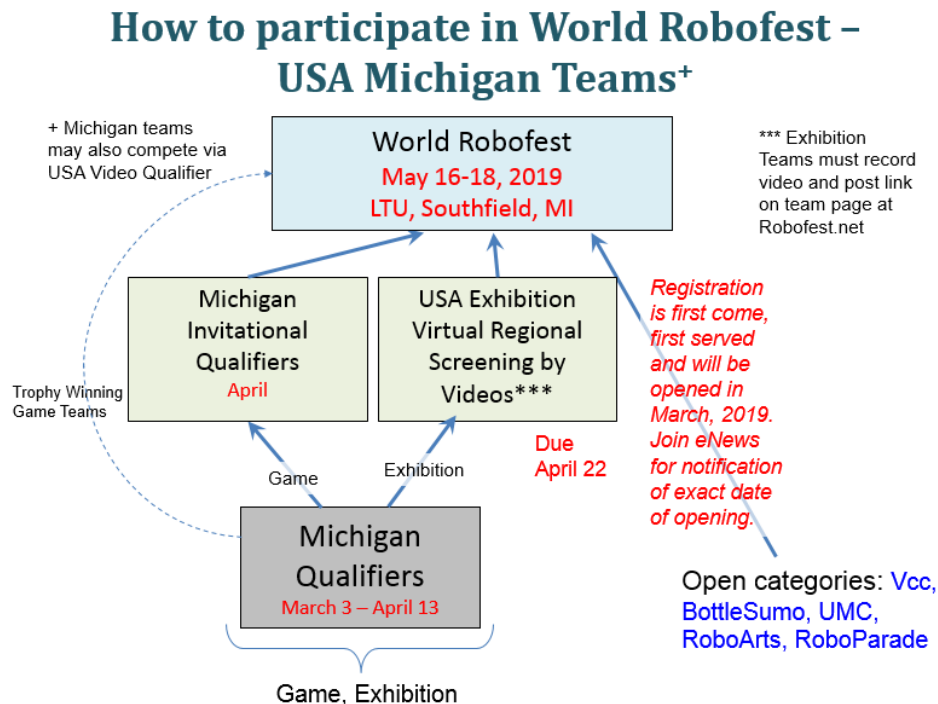
11   Team Photo Contest

The best team photos will be selected from those uploaded. Every team is automatically entered once the team photo is uploaded to the registration system. Selection criteria includes upload date, team spirit, unity, harmony and uniqueness. Please make sure that only registered students are included in the team photo. Please upload the team photo as early as possible, since the uploading date is also one of the selection criteria for the award.

12   Michigan Teams Advancement to World Championship

A. Again for 2019, the Michigan Championship event has been eliminated. Instead, multiple invitational qualifiers will be offered for teams to have another chance to improve their scores.
B. Michigan Game teams will advance as follows:
   1. All Trophy-Winning Game teams from each Michigan Qualifying competition will automatically advance to the World Championship Competition on May 16-18, 2019.
   2. Other Game teams from MI Qualifying competitions who would like a second chance to qualify for World Championship may register to compete again at one of several Michigan Invitational Qualifier Events to be scheduled during the month of April, 2019 at Lawrence Technological University.
      a. Teams must register with a new team number and pay a new registration fee to be eligible to compete.
      b. Teams will receive a Michigan Invitational Certificate and Medal of participation.
      c. The total number of Game teams advancing from the Michigan Invitational Qualifiers to the World Championship will be decided on the team's scores.

C. Michigan Exhibition teams will advance as follows:
  a. All Trophy Winning Exhibition Teams from the Michigan Qualifying competitions will advance to the World Championship via the Virtual Regional by submitting a video to the team registration site in the same manner as Non-Michigan Exhibition teams (see section 13.B).
  b. Other Exhibition teams from MI Qualifying competitions who would like a second chance to qualify for World Championship may register to compete again through the US_Video_Qualifier (see section 8 for details and deadlines).
    (i) Teams must register with a new team number and pay a new registration fee to be eligible to compete.
    (ii) Teams will receive a Video Qualifier Certificate and Medal of participation.
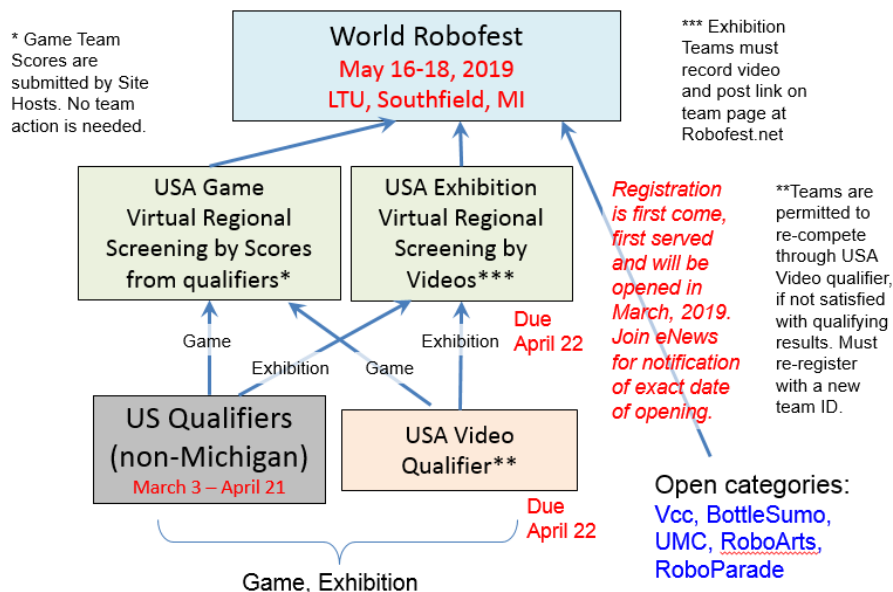D. **Figure 1** summarizes how Michigan Game, Exhibition teams advance to the World Championship:

(Figure 1) – World Championship Advancement Structure for Michigan Teams.

13 US (Non-MI) Teams Advancement to World Championship through "Virtual Regional"

A. Winning Game Teams from Non-Michigan Qualifying competitions will advance to the Virtual Regional for consideration for the World Championship based on qualifying scores. Scores will be sent directly to Robofest by the Site Host for screening. Teams do not need to send them.
B. Winning Exhibition Teams from Non-Michigan Qualifying competitions must record a video and publish it to a video hosting site, then add then upload a link to the team's Qualifying Site registration page for consideration for the World Championships based on a Video Screening.
    1. The coach must upload a video link to the team's registration page. See steps and additional information on what to include in the video in **Section 8**.
    2. The Deadline for Video Submissions for the Virtual Regional is 11:59 pm Eastern time, Monday April 22, 2019.
C. Other Game and Exhibition Teams from Non-Michigan qualifying competitions who would like a second chance to qualify for World Championship can register for Video Qualifier.
    1. Teams must register with a new team number and pay a new registration fee to be eligible to compete.
    2. Teams will receive a Video Qualifier Certificate and Medal of participation.
D. **Figure 2** summarizes how USA (Non-Michigan) Game, Exhibition and Open Category teams advance to the World Championship.
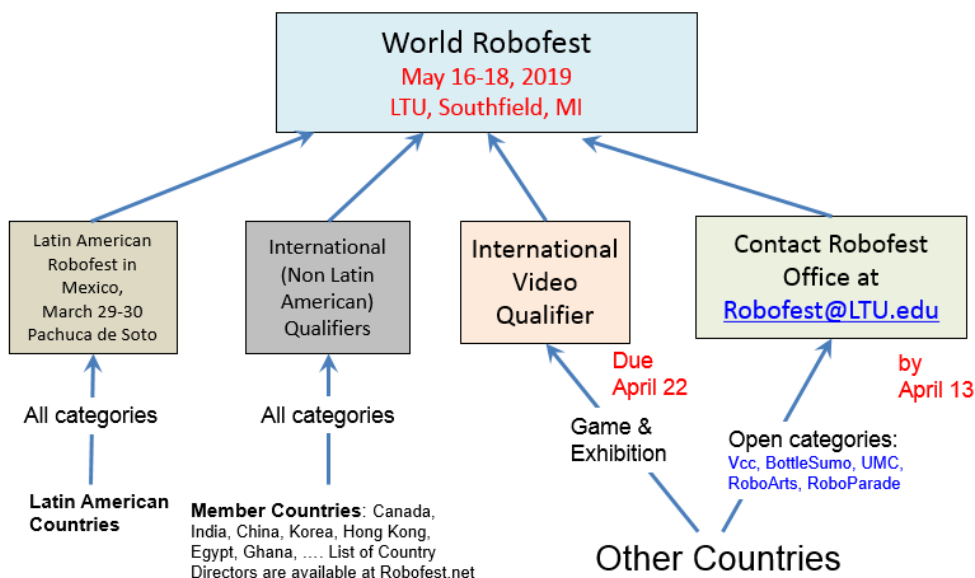
(Figure 2) – World Championship Advancement Structure for US (Non-Michigan) Teams.

14 International Teams Advancement to World Championship

A. International Game, Exhibition and Open Category teams in Member countries (Canada, India, China, Korea, Hong Kong, Mexico, Egypt and Ghana) will compete at Member Country Qualifiers. Qualified teams will be advanced to the World Championship through the Director.

B. International Game and Exhibition teams in other countries may compete via International Video Qualifier Submission (see **Section 8**).

C. International Open Category teams in other countries can register directly for the events.

D. **Figure 3** summarizes how International Game, Exhibition and Open Category teams advance to the World Championship.

(Figure 3) – World Championship Advancement Structure for International Teams.

15 World Championship

A. Top Game and Exhibition teams from MI Qualifiers, Video Qualifiers, MI Invitational, Virtual Regional and International Qualifiers advance to compete in the World Robofest Championship at Lawrence Technological University's Field House in Southfield, MI, on May 16-18, 2019.

B. US Game and Exhibition teams will be notified of advancement no later than April 26, 2019.

C. As part of World Championship, there will be Open Competition categories offered (see section 1). These are open to any US teams, International teams selected in Member Countries and some additional international teams.

D. Category Rules and registration information will be posted on the Robofest.net website.

16 Robofest Scholarships

Distinguished Robofest team members who choose to attend Lawrence Technological University may apply for scholarship. Submit an 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 annual renewable scholarship (total of $12,000). Deadline date: April 1st. The application is located on the LTU.edu Scholarship website under the "Future Students/Portfolio and Private Scholarships" tab.

17 Reordering Certificates and Trophies

Robofest can re-print participant certificates for a minimum charge. Winning teams may also request personalized winner/place certificates or additional trophies for a fee. Please visit the Robofest website at robofest.net for additional information.

18 Robofest 2019 Coach's Pledge

As a Robofest coach, I have read and agree to abide by the Robofest 2019 general and category specific rules as they exist now and as they may be set forth during the Robofest season.

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, or webpage updates. 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.