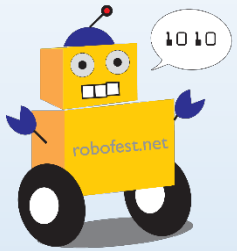


24th LAWRENCE TECHNOLOGICAL UNIVERSITY ROBOFEST 2023

Kickoff III Presentation

Little Robots, Big Missions

January 7, 2023

This file can be found under the **Get Involved→2023 Main** page on the website

www.robofest.net robofest@ltu.edu 248-204-3568

Room J233 Taubman Complex, LTU
21000 West 10 Mile Road, Southfield, MI 48075, USA

Kickoff Meeting Agenda

- *Introductions*
- *Workshop Schedule and Grant Opportunities*
- *Site Host Opportunity*
- *General Rules Highlights*
- *Open Competition Categories*
- *Exhibition Rules*
- *General Rules Q & A*
- *Game Rules*
- *Q & A and Wrap Up*

Robofest Staff

Staff:

- Dr. Chris Cartwright, Prof. of Mathematics, Robofest Director
- Elmer Santos, Assistant Director
- Shannan Palonis, Coordinator
- Pam Sparks, Coordinator
- Dr. CJ Chung, Prof. of Computer Science, Robofest Founder, Advisory Board Chair
- Marilyn Weisman, MCS Department

Student Assistants:

- Stephen Arnold
- Giovanni DeRose
- Robert Newberry
- Scottie Rapp
- Anthony Shevenock
- Nicholas Sparks

Robofest Advisory Board

- Dr. CJ Chung, Robofest Founder, Prof. of Computer Science, Advisory Board Chair
- Dr. Paul M. Akangah
- Emma Alaba
- Phil Bigos
- Dr. Gavin Coleman
- Scott Eisele
- Linda Pence
- Dr. Josh Siegel
- Gordon Stein
- Maurice Tedder

Thanks to our Sponsors

2023 Workshop Schedule

Workshops are available at no cost to registered Game or Exhibition Teams (pre-registration is open)
Held in the Robofest Lab on LTU Campus. Materials can be requested if teams cannot travel to LTU.

- NEW! Artificial Intelligence/Machine Learning for Exhibition with LEGO Spike Prime or Robot Inventor
  - Saturday, 2/4/23 – 2:00 pm ~ 4:00 pm
- VEX IQ with VEX Code
  - Saturday, 1/14/23 - 9:00 am ~ 12:00 noon
  - Saturday, 2/25/23 - 1:00 pm ~ 4:00 pm
- LEGO EV3 with Scratch
  - Saturday, 1/14/23 - 1:00 pm ~ 4:00 pm
  - Saturday, 1/28/23 - 9:00 am ~ 12:00 noon
- LEGO Spike Prime with Python
  - Saturday, 1/28/23 - 9:00 am ~ 12:00 noon
- LEGO Spike Prime with Scratch
  - Saturday, 2/25/23 - 1:00 pm ~ 4:00 pm

2023 MCWT Grant Opportunity

- **$750 grant for all-female Robofest Game or Exhibition teams in Michigan**
- **Funds can be used for equipment, registration fees, travel expenses…**
- **10 grants available**
- **Application deadline March 15, 2023**
  https://mcwt.org/programs/list/K-12-Initiatives/ROBOTICS-GRANTS

Site Host Opportunity

Robofest Site Host Opportunity

- Hosting Robofest Competitions provides great visibility for your organization
- Showcase your facility, staff and students to prospective students (clients) and their parents, major media outlets, and the community at large
- Opportunities for STEAM Outreach in your local area
- Robofest Qualifying competitions are usually only half-day (4 hour) events
- Flexible Scheduling –Saturday or Sunday, morning or afternoon, even week nights

LTU Support for Site Hosts:

LTU Provides at no cost:

- Promotion of your organization as an official Robofest Site Host
- Information management website for team and volunteer registration
- Competition preparation – Judge and volunteer training, game materials
- Event support – Signage, name badges, program template
- Personalized participant recognition:
  - Award Trophies for 20% of registered teams
  - Participant Medals
  - Coach and Participant Certificates, with your logo and signed by your representative

Site Host Provides:

Facility - A gym or a large multipurpose room such as a cafeteria or banquet room with consistent lighting

- **Competition Area** (Game, BottleSumo or RoboParade categories) – Space to set up Official playing fields and practice playing fields
- **Secure Pit Area** (Game, BottleSumo or RoboParade categories) – Work table with chairs and power for each team – Limit access to students only. (6~8-foot tables, or round banquet tables)
- **Exhibition area** (Exhibition category) – One 6~8-foot table per team with additional floor space for team exhibits and judge/spectator access
- **Audience seating** – Chairs or bleachers with a stage or central area for opening and award ceremony

Site Host Provides:

Staff/Volunteers

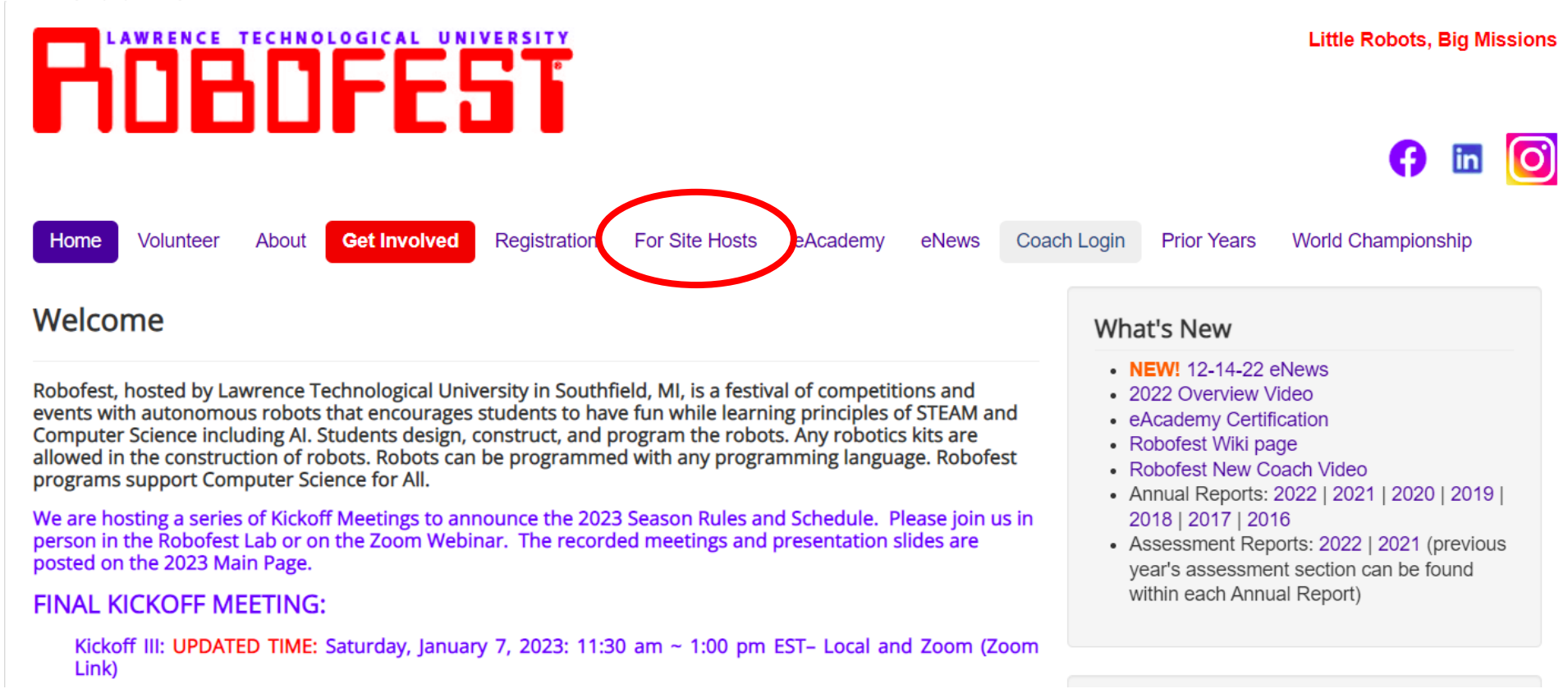
- Minimum of 4 “Executive” volunteers (Site Host, Registration, Master of Ceremonies and Chief Judge)
- PLUS the amount required to manage each category and age division (Judges, Proctors, Set-up/Clean-up)

Optional Concessions Fundraiser opportunity for school or community organizations

Optional Team Fee Site Host may charge a per team fee to offset costs (recommended no more than $20)

Site Host Application:

Application and additional information can be found on the Robofest.net website:



General Rules Highlights

Open Competition Category Highlights

BOTTLESumo

- Be the first robot to intentionally push a bottle off the table OR be the last robot remaining on the table
- Three Age Divisions:
  - Junior Division (Grades 5~8): Only LEGO NXT, LEGO EV3, LEGO Spike Prime and VEX IQ
  - Senior Classic Division (Grades 9~12): Only LEGO NXT, LEGO EV3, LEGO Spike Prime and VEX IQ
  - Sr. Unlimited Division (Grades 9~12): Any robot platform
- Max team size: 3
- Rules: robofest.net → **Get Involved** → **BottleSumo**

UMC

- Unknown Mission Challenge
- Missions are completely unknown until day of challenge
- Two Age Divisions:
  - Junior Division (Grades 5-8)
  - Senior Division (Grades 9-12)
- LEGO NXT, LEGO EV3, LEGO Spike Prime or VEX IQ kits
- All robot components must be un-assembled at the beginning of the competition
- Max team size: 4
- Rules: robofest.net → **Get Involved** → UMC

RoboArts

- Exhibition style projects specifically focused on the visual and performing arts
- Two Age Divisions:
  - Junior Division (Grades 5-8)
  - Senior Division (Grades 9-12)
- Max team size: 5
- Rules: robofest.net → **Get Involved** → RoboArts

RoboMed

- Exhibition style projects of intelligent and interactive (bio) medical robotics/devices or related to (bio)medical and healthcare fields
- The project must use sensors and/or actuators
- Promotes on entrepreneurial mindset. Sentences about “Opportunity Recognition” and “Value Creation” are encouraged in the project description
- Three age divisions
  - **NEW!** Junior Division (Grades 5-8)
  - Senior Division (Grades 9-12)
  - College Division (Undergraduate including Community College students)
- Team Size: Maximum five (5)
- Rules and Judging rubrics: robofest.net → **Get Involved** → **RoboMed**

RoboParade

- Robots are constructed and programmed by student participants to follow the parade route, detect other vehicles, stop and start without human help
- 2023 World Championship Event Theme: **“Animation”**
- Robots pull or carry decorative parade floats. Moving parts are allowed
- One Age Division
  - Junior - 4th ~ 8th Grade (no waiver needed) Perfect for beginners
- Max team size: 5
- Rules: robofest.net → **Get Involved** → **RoboParade**

Exhibition Rules

Exhibition

- Complete freedom to show off any type of creative intelligent robotics project -Robotics Science Fair
- Two Age Divisions:
  - Junior Division (Grades 5-8)
  - Senior Division (Grades 9-12)
- 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
- Sharing online videos (such as YouTube) is highly recommended prior to Qualifiers so judges can prepare questions –Upload to team registration page

Judging

Rules and Rubric: 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 Judging Rubric (1 of 2)

Similar Rubric is used for RoboArts and RoboMed

Exhibition Judging Rubric (2 of 2)

ROBOFEST

Lawrence Technological University

General Rules, Open Categories and Exhibition

Q&A

2023 Game Rules

Presented by Elmer Santos

Game Rules
Q&A

Thank You!

Send questions to Robofest@ltu.edu

Next Kickoff Meeting is Thursday, November 3, 7:00 pm