Slide 1:

13th anniversary **ROBOFEST 2012**

Kick-off Info Meeting

December 5, 2011 , 2:30 pm EST
December 9, 2011, 6:30 pm EST
December 17, 2011, 10:00 am EST
January 7, 2012, 10:00am EST

Please download a zip file containing Robofest 2012 rule documents at www.robofest.net and click on:

Enter 2012 Competitions

The (webinar) meeting will begin shortly.

Slide 2:

The Zipped file contains the following files:

- RobofestVideoSubForm12fill.pdf
- robofest12rules.pdf
- robofest12kickoff.ppt
- robofest12kickoff.pdf
- RoboFashionDance.pdf
- R2Rv.pdf
- R2R2.mp4
- R2R.mp4
- ConsentReleaseForm.pdf
- ageWaiverForm12fill.pdf

Slide 3:

13th anniversary **ROBOFEST 2012**

Kick-off Info Meeting

"Inspiring Young Minds to Master the Machine."

Robofest 2011 World Championship Participants, May 7. 2011

Slide 4:

Welcome to **ROBOFEST** 2012

Little robots, **Big Missions**

- Dr. CJ Chung, Associate Prof. of Computer Science, Founder and Director, chung@LTU.edu
- Dr. Chris Cartwright, Associate Prof. of Math, Program Manager
- Teri Dubois, Associate Coordinator, tdubois@ltu.edu, 248-204-3568
- Susan Latos, Assistant Coordinator
- Wendy MacLennan, Assistant Coordinator

- Dr. Joe DeRose
- Dr. Kurt Meister
- Prof. Keith Bozin

- Tiffany Platt
- Ann Maten
- Chris Kawatsu
- Chris Parker
- Gordon Stein
- Taiga Sato
- Jon Nabozny
- Dan Anderegg
- …

Slide 5:

Kick-off Info Meeting Agenda

- Overview of Robofest
- 2012 Rules for each Main Competition category
- Introduction to Associate Competitions
- 2012 Registration
- Schedule
- Q & A

Please join the Robofest eNews list at robofest.net!

Slide 6:

Goals of **ROBOFEST**

- Motivate students' interest in STEM subjects
- Integrate STEM subjects into autonomous Robotics Competitions
- Put theories into practice through Robotics
- Promote students' creative and innovative thinking
- Build the work force of the future

Features of ROBOFEST

- Autonomous - Sensors required
- Challenging - dynamic playing fields, unknown factors, and **no** direct adult help allowed
- Any robotics system
- Affordable (reusing old kits; reg. fee: $50)
- Pre and Post Assessments (on-line)
- Qualifiers, Regionals & World Championship
- Age Divisions
  - Jr. Division: (4)5th – 8th
  - Sr. Division: 9th – 12th
- Associate Competitions for more opportunities

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2012 Season Opportunities

- **Main Competitions**
  - **Game**
  - **Exhibition**
  - **RoboFashion & Dance (RFD)**
- Associate Competitions
  - Vision Centric Robot Challenge (VCRC)
  - nVn Multi Robot Team Sumo
  - Hexapod RoboSumo
  - Bottle RoboSumo

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Main Competitions

Competition Category	Age Division	Team Size	Robot	Unknown factors	Assessment
Game – R2R	Jr. & Sr.	Max 7	Any	Yes	Yes
Exhibition	Jr. & Sr.	Max 7	Any	No	Yes
Fashion & Dance (RFD)	4th & Jr.	Max 7	Any	No	Yes

Registration Fee: $50 (relatively low-cost)

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3 levels of Main Competition

One World Championship   May 19, 2012 at Lawrence Tech

3 Regional Championships

Over 20 Local Qualifiers

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2012 Qualifying Sites

- United States: MI, HI, TX, FL, MN, OH, (IN, NH, CA), …
- International
  - Canada
  - Mexico
  - China
  - Korea
  - …
- Video Submission
- Check out the complete list at robofest.net

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Submitting a Qualifier Video

- Video Submission in Games, Exhibition, and RFD is available to teams who do not have a Robofest Qualifier in close proximity
- Game teams: contact robofest@LTU.edu prior to the submission to get unknown factors
- When submitting a video, the coach must include the signed submission form available at www.robofest.net / 2012 link
- All videos must be *received* by Monday, Apr 2, 2012, Noon, EDT.
- Video link preferred

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Recognition of Video Submission Teams

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

Regional Championships (RC)

- Top teams from each qualifier will advance to a RC
  - Asia-pacific RC: Early Spring, Korea
  - Michigan RC: April 14, Lawrence Tech, 60 team slots available
  - Video RC:
    - Phone interview possible
    - No video required for Game teams (scores from Qualifiers to be used)
    - Exhibition/RFD teams must provide video sharing site link by Noon, Apr 7, 2012, EDT
    - No action needed for teams through Video Qualifier
- Number of World Championship team slots allocated to each Regional will be determined in March

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Online Assessment for Math and Science (anonymous)

- Pre-assessment: Instructions will be emailed to coaches in January
- Post-assessment: After the qualifier, instructions will be emailed to coaches in early April.

- We need control groups (non Robofest students). If interested, please email to Dr. Cartwright, ccartwrig@LTU.edu

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World ROBOFEST Championship

- Lawrence Tech, Southfield, Michigan
- 60 teams will be invited from Regional Championships (RCs)
- Friday, May 18, 2012 – Robofest 13th Anniversary dinner
- Saturday, May 19, 2012 World Robofest
- Associate Competitions
  - VCRC
  - Hexapod RoboSumo

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Team Photo Contest for Main Competition (Game, Exhibition, and RFD teams)

- A team picture needs to be uploaded within 3 weeks after the team registration *and* at least 10 days prior to the Qualifier.
- Selection criteria: team spirit, unity, harmony, uniqueness, etc.
- Winners will be announced during the World Championship

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Exhibition Competition Category

- Complete freedom to show off any type of creative autonomous robotics project
- Must employ sensors
- Human to Robot, Robot to Robot interaction *strongly* encouraged
- Using robotics to learn/teach STEM highly recommended. For example, Power & Energy related experiments – some free energy sensors will be available for high school teams
- Sharing online video (such as YouTube or SchoolTube) is highly recommended

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Exhibition Competition Example Projects

- Visit www.robofest.net and click on Exhibition link.
- Videos and pictures
- All the top winners since 2002

RoboFashion & Dance (RFD)

- Two robots are recommended
- Communication between two robots
- Human to Robot, Robot to Robot interaction *strongly* encouraged
- Stage:
  - Two 30"x72" plastic (folding leg) tables should be used
  - Team will have freedom to design their landmarks by themselves
  - Bring the tables to the competition site (or ask *Robofest office* to prepare at least two weeks in advance.)
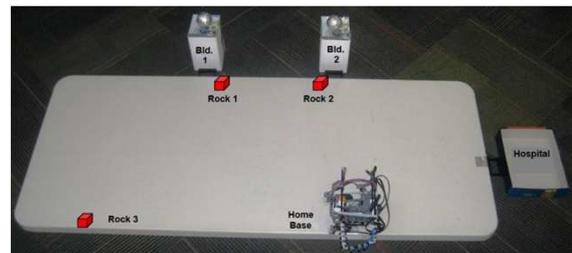
RFD Competition Example Projects

- Visit www.robofest.net and click on "RoboFashion & Dance" link.
- Videos and pictures
- All the top winners since 2007

Robots to the Rescue (R2R) – 2012 Game

Rescue people on the top of the two buildings

Learning objectives: motion, manipulation, object detection, localization, logic, ratio, proportion, math operations, measuring, trigonometry (Sr. only), and navigation
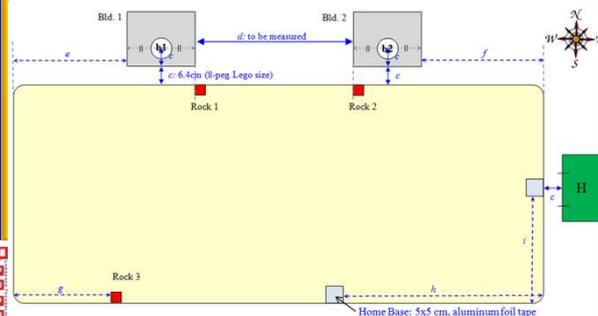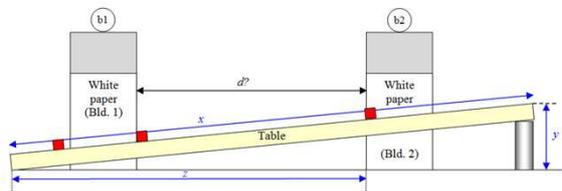
ROBOFEST 2012 Game "R2R" Animation Video

http://youtu.be/0Et5yKBZzrc
or play R2R.mp4 file in the zip

go to www.robofest.net Click on 2012 button You will find a YouTube video icon.

http://youtu.be/9bdQCurXuLl
or play R2R2.mp4 file in the zip

Playing Field Layout (Jr. Division)

Playing Field Layout (Sr. Division)

Teams are required to measure the table thickness, if needed.

Rounds

- 2 rounds, 2 minutes per round
- Playing field unknown factors for each round will be different.
- Teams will be given 30 minutes after the playing field is unveiled and the playing field parameters are given.
- All teams must submit their robot to the impound area when 30 minutes has expired *and* after their 2 min round has been completed.

How to start the robot

- Robot must start with any part on *or* over the Home Base plate (aluminum tape)
- Width & Length: max. 35 cm
- It may hang over the edges of the table.
- Players may touch / modify only when the robot is on or over the aluminum tape

Rule Violations

- Penalty (-5) points (max two times):
  - If any part of the robot is touched outside of Home Base by a player
  - **Playing field** is touched or moved by a player
- After the violation is announced
  - The robot must be re-started from Home Base
  - Playing field **may be reset fully or partially by the player's request** --- NEW!!!

Scoring Sheet (1)

Judging Items (*checked only at the end of a game*)		Count	Point Value (per count)	Score Earned / Lost
(1) Robot reached Building 1 (*Lego block1 is moved*)		0 (no) 1 (yes)	5	
(2) Robot reached Building 2 (*Lego block2 is moved*)		0 (no) 1 (yes)	5	
(3) Rock 3 is removed from the table?		0 (no) 1 (yes)	5	
(4) # of Balls	Saved in the Hospital Box	0 1 2	30	
	Saved on the Robot	0 1 2	20	
	Not on the Buildings	0 1 2	10	

Scoring Sheet (2)

	Count	Point Value	Score
(5) The robot reached building 1 and 2, and reported the distance between them in millimeter at the Home Base: _____ (*)	0 (no) 1 (yes)	20	
(6) The robot remained intact throughout Game?	0 (no) 1 (yes)	5	
(7) Number of buildings moved including Hospital	0 1 2 3	**-5**	
(8) Number of red cards that will be given when human player touches the robot and re-started. (Judges may reset the playing field by request)	0 1 2	**-5**	

Max. score possible is: 100

Total Score

Time If perfect score (**) (sec. xx)

(*) the acceptable range to earn points will be given to Judges   (**) first tie breaker

Robot Specifications

- Max length and width: 35cm x 35cm
- Height and weight: no limit
- One brain (controller)
- Any number of sensors/sensor types
- Any number of motors
- Any material
- Any programming language
- Must have a team ID tag

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FAQs (1)

- Is there a required sequence of missions? No.
- Will there be judging of the team's programs? – No. However, judges may visit team tables to check the code.
- Can teams adjust the height of the robot arm after the building is unveiled? - Yes. Teams may need to bring additional parts. Also, teams may need to bring a tape measure to measure the width of the box, if needed.

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FAQs (1)a

- Can we ask reset when the robot is in action? No, only when the robot is at the Home Base.
- Can you ask for a reset when the robot is over Home Base without penalty? Yes. There is no penalty for asking for a reset. Also note that no penalties given if a box is moved and then reset. All the penalties, with the exception of touching the robot or playing field, will be assessed by the judges *at the end of the game.*

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FAQs (2)

- If we ask for the playing field to be reset, do we lose any points we have already achieved? No. You should ask partial reset.
- Do the judges stop the clock to reset? No
- Can a robot intentionally drop a part? What if a robot drops a part in the hospital box as a means of delivering the ball? Will it get penalty points? No
- What if a robot drives into the hospital box? Obviously, this is an accident. The robot must be picked up. The ball is not saved.

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FAQs (3)

- Can we use a touch sensor to measure the distance between two buildings? – No. If the buildings are touched by the robot *and* moved, then you may get penalties. See score sheet item (7)
- What is the definition of "building move"? That means any noticeable move. Judge's decision is final.
- Must the robot stop at Home Base? No. A player can pick it up at the Home Base without penalty.

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FAQs (4)

- Must robot *stop* to report the distance at the Home Base? No.
- Can a robot still display distance after the 2 min time runs out? Yes. So it is a good strategy to do the display as the last mission.
- Can we get the points of the reporting the distance, if Rock1 and 2 are not moved? No
- Do Rock 1 and 2 have to be moved off the table or just moved? Just moved.
- If the ball bounces out of the hospital box, do you lose points? Yes. The ball is not saved.

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FAQs (5)

- If we are getting the balls off of the building. Can the robot touch the building as long as it does not move the building? Yes, no penalty.
- A robot brings a ball to Home Base. Can you take the ball off the robot by hand at the Home Base? Is it still count as a ball saved on the robot or does it have to physically be on the robot at the end of the game? Judges will check the balls at the end of the game. To get 20 points, it must be on the robot at the end of the game.

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2012 Associate Competitions

- June 9-10 at Oakland University during IGVC (www.igvc.org)
- VCRC and "*World of Sumo Robot Competition*" at IGVC
  - *n*V*n* (2V2)
  - Hexapod
  - Bottle → Somerset Mall in Feb (?) 10-12.
- First come, first served. Space is limited. Register and pay reg. fee early!

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Associate Competitions

Competition Category	Age Division	Team Size	Robot	Unknown factors	Assessment
Vision Centric Robot Challenge (VCRC)	Sr.	Max 3	L2Bot or Any*	Partly yes	No
2v2 Team RoboSumo	Sr.	Max 3	Any	Yes	No
Hexapod RoboSumo	Sr.	Max 3	BIOLOID premium	Partly yes	No
Bottle RoboSumo	Jr. & Sr.	Max 3	Any	Yes	No

Registration fee: $50   (*) need pre-approval
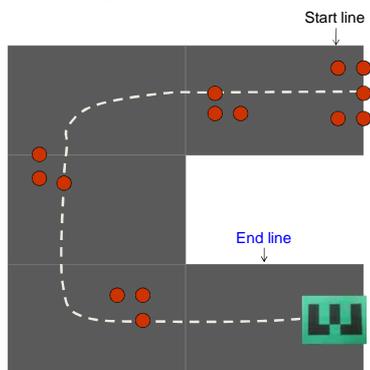
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VCRC 2012

- Vision-based robot competition
- Senior and College Divisions
- More difficult than previous years

Go to robofest.net/collegiate for 2012 Rules and to watch a video of past competitions
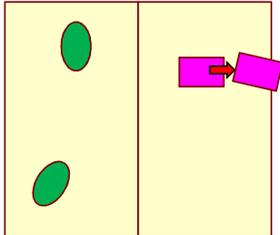
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2012 VCRC course

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nVn Team RoboSumo

- *n* = 2, a team of two robots in 2012
- 1 match – up to 3 games
- 1 game - up to 2 minutes

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DFA (Deadly Friendly Attack) of nVn RoboSumo

- A robot team loses a game if a robot is out of the table (intentionally or unintentionally) pushed by a friend robot

Pink loses the game. Game ends!

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How to start/play the nVn game

- Size & weight must be checked for each match
- Press the start button of one robot. Then the robot must send wireless signal such as Bluetooth to start the other robot.
- Go to robofest.net and click on nVnRoboSumo link for more details

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Hexapod RoboSumo

- RoboSumo on legs! - World's first and unique
- The objective is to climb up the octagon ring and to be the surviving Hexapod robot inside the ring until 2 minutes expire

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Bottle RoboSumo

possibly in Feb 10-12 at Somerset Mall in Troy, too

- The object of the game is to either be the first robot to push a 2 liter bottle (filled with 1 liter of water) off the table OR be the last robot remaining on the table.

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How to Register a Team for both main & associate competitions

1. Read 2012 rules; *if returning coach*, go to 4 below.
2. Go to robofest.net, click on 2012 button, and submit New Coach Registration form
3. Confirm the registration at your email account – If you do not receive a confirmation email, please contact robofestoffice@gmail.com
4. Log on to the coach account at robofest.net
5. Select a qualifying site and a category per team
6. Register team(s)
7. Pay registration fee online using PayPal (or send a check)
8. Upload team photo; update team info as necessary

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Registration FAQ

- Can a coach register multiple teams at a site: Yes
- Can a coach using one coach ID register teams in multiple sites? Yes
- Can a student be a member for multiple teams?
  - At multiple sites: Yes, if no date/time conflict
  - At Same Site: maybe…

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Registration Deadline

- 21 days (3 weeks) before the Qualifying Competition date
- If a division at a site does not have 5 teams or more, teams registered at the site *may* be moved to another site; or teams can enter via video submission

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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 any criminal record.
- Please note: email is the primary and official communication method between the team and the Robofest organizer.
- Coaches must agree to *and* abide by the 2012 Coach's Pledge

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Roles of Team Coach

- Recruit team volunteers, including tech mentors and assistant coaches, if needed
- Find sponsors
- Responsible for facilitating team meetings
- Responsible for entering/updating the team data and uploading team & robot photos
- Collect Consent & Release forms to submit at all event check-ins
- Coordinate online pre & post assessment

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Age Division Waiver Requests:

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

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Things to bring on Competition Day

- Check-in fee (if required by the qualifying host)
- A laptop or PC for each team
- *Exhibition teams*:
  - Hard copy of programs to give to judges, optional
  - Poster boards to introduce the exhibition description and all the necessary materials for the exhibition
  - Video sharing link
- *RFD teams*:
  - Music file and appropriate device for playing it
  - Your own stage
- A power strip and power cord
- Extra batteries or battery charger
- Signed Consent & Release forms

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2012 Main Season Schedule

- Dec 5: Rules announced & posted on the web; Team registration begins
- Late December: finalization of Rules; watch for eNews announcement
- Jan ~ Feb, 2012: Technical workshops, On-site workshops, pre-assessment
- Feb 18: **Warm-up at LTU (Judge Training)**
- Mar ~ early Apr: Qualifiers, post assessment
- April 2: Video Qualifier deadline
- April 14: Regional Championships completed
- May 19: World Robofest Championship

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Early date qualifying sites
will advance
more teams
than late date sites!

Technical Workshops at LTU & Webinar: watch for URL by email

Date:	Time:	Workshop:	Location:	Instr.
Sat. Jan. 14	9a-12p	NXTG for Game	LTU, M218	Dr. Cartwright
Sat. Jan. 14	1p-4p	NXTG for Game	LTU, M218	Dr. Cartwright
Sat. Jan. 21	9a-12p	NXTG for Game	LTU, M218	Dr. DeRose
Sat. Jan. 21	1p-4p	RobotC for Game	LTU, M218	Dr. Cartwright
Sat. Jan. 28	9a-12p	NXTG for Game	LTU, M218	Dr. Cartwright
Sat. Jan. 28	1p-4p	L2Bot with Java	LTU, M218	Dr. Chung
Sat. Feb. 4	9a-12p	NXTG for Game	LTU, M218	Dr. DeRose
Sat. Feb. 4	1p-4p	NXTG for Ex & RFD	LTU, M218	Dr. Cartwright

On camps workshops are only for registered teams

NXT-G or RobotC workshop

- Mainly for R2R game
- Bring a pre-assembled Lego NXT robot that can follow the edge of white table with one light sensor
- Attach another light sensor to detect a box
- Bring a laptop with NXT-G software installed
- Do not forget to bring a USB cable

R2R Game Field Kits may be available for purchase

- Visit M219, Robofest office in Jan ~ Feb.
  - Table (Used) - $37
  - R2R kits - $9
    - 2 Balls
    - Foil Tape / Lego Blocks / Rubber bands
    - 2 Boxes with white papers
    - One box for the hospital
  - Tape Measures
  - Etc.
- robofestoffice@gmail.com
- We will ship Game kits for each official host site

New for 2012

- PVSA (President's Volunteer Service Awards)
  - Register
  - Enter your volunteer hours
- Personalized medal
- More Lawrence Tech Scholarships
- Greener! Fillable PDF (Age waiver and video submission forms)
- *Android Robofest Timer. Use keyword "Robofest" on the market. Free!!*

Questions?

Hope you had

Happy Holidays

robofest.net

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