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2013

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# ***FIRST***<sup>®</sup> **LEGO**<sup>®</sup>

## WEST ONTARIO CHAMPIONSHIPS

Waterloo, Ontario | Saturday, January 11, 2014

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UNIVERSITY OF  
**WATERLOO**

## Welcome from the University of Waterloo

It is my privilege to welcome you on behalf of the University of Waterloo to the FIRST LEGO League's West Ontario Provincials. Whether you are here as a competitor, a coach or supporting one of the teams, I hope you will enjoy today's exciting event.

I would like to congratulate all the students and teams for your motivation, creativity, and hard work that have brought you through the regional tournaments and into this next round of the competition. Each of you should be very proud of your accomplishments.

Thanks are also extended to the coaches and mentors who have volunteered their time and talent helping each of these teams get to the Championships.

The University of Waterloo is proud to once again host the West Ontario Provincial Championship. The objective of the students in this year's challenge — to use creativity and ingenuity to solve practical global problems — is a goal that we also share. Founded in 1957, the University of Waterloo strives to harness the power of science and technology to meet the needs of society and build a better tomorrow.

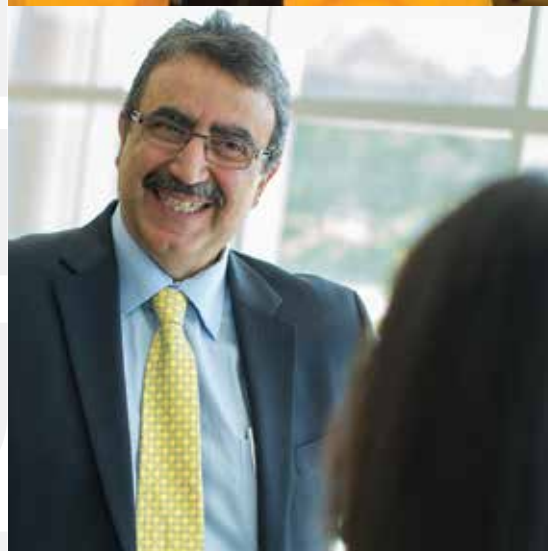
I hope you have a chance to interact with our university's staff, faculty, student, and alumni volunteers who have worked hard with the FIRST LEGO League organizers to help put this event together. I thank them for their hard work in organizing a safe, successful, fun, and friendly competition.

I wish all the competitors the very best of luck and I welcome you to take the opportunity to get to know this university a little better while you are here.

Sincerely,



**Feridun Hamdullahpur**  
President and Vice-Chancellor  
University of Waterloo



WATERLOO



## The Project

### PREPARE | STAY SAFE | REBUILD

In the Nature's Fury Project, your team will:

- » Identify a community that could experience a natural disaster
- » Identify a problem that happens when a natural disaster occurs
- » Create an innovative solution that helps people prepare, stay safe, or rebuild
- » Share your problem and solution with others

### THINK ABOUT IT

Little did 10-year-old Tilly Smith know that her geography lesson would save her life. Tilly and her class sat quietly watching a video about a tsunami halfway around the world in Hawaii in the United States of America. They watched the ocean sizzle and froth and thought it looked like a fizzy drink being poured into a glass. They watched a wall of water rise up from the ocean and crash on the shore. They saw the damage left behind. It was interesting, but it seemed very far away from Surrey, United Kingdom.

Then, Tilly and her family went to Phuket, Thailand, for winter holidays. On December 26, 2004, as Tilly and her family played on the beach, she noticed something strange. The ocean was bubbling — almost like a fizzy drink being poured into a glass.

Suddenly, Tilly realized where she had seen this strange sight before. She took action. Tilly told her parents that a tsunami was on the way. Tilly's parents had not learned about tsunamis in school, so they did not know what a tsunami was. She explained what she had learned and that everyone needed to get away from the beach fast. Tilly's parents took action, too. They shared what Tilly had learned and warned the hotel staff to get everyone to higher ground — just in case.

That day, the ocean did more than just splash on the beach. Not long after Tilly warned everyone, a huge wall of water washed across beaches, cars, buildings, and everything else near the water. Nobody died on the beach near Tilly's hotel. Thanks to Tilly, everyone got to safety before the huge wave arrived.

Others were not so lucky. The tsunami hit the coasts of 13 countries. The giant wave created by an undersea earthquake injured more than 600,000 people. Not everyone survived. Many, many people lost their homes. In some places, there was very little warning. The wave hit Sumatra just 30 minutes after the earthquake. It hit Tilly's beach less than two hours later.

### What happens when forces of nature harm people and damage property? A natural disaster.

Tsunamis are not the only forces of nature that can cause natural disasters. Our planet has been moving and changing for millions of years. When forces of nature damage communities or put many people in danger, it's called a natural disaster. Natural disasters of all kinds happen in every part of the world. Each year almost 250 million people find themselves in or near a natural disaster.

Think about it.

- » Rain helps the plants grow and gives us water to drink. But what happens when the rain falls so hard that rivers, streams, and lakes spill onto dry land? A flood.
- » When the wind blows, you can fly a kite or paper airplane. But what happens when the wind blows so hard that it knocks down houses or picks up cars? A tornado or a hurricane.
- » Did you know that the ground under your feet is moving? Usually, it moves so slowly that only the scientists who study it know it's moving. But what happens when it moves so hard and fast that you feel the ground shake or see lava flow? An earthquake or a volcanic eruption.

Any of these natural events could cause a natural disaster. Your Project challenge this season is to develop an innovative solution that helps people prepare, stay safe, or rebuild.



## About *First*<sup>®</sup> Lego League

### FLL MISSION

Our mission is to inspire young people to be science and technology leaders by engaging them in exciting mentor-based programs that build science, engineering and technology skills, inspire innovation, and foster well-rounded life capabilities including self-confidence, communication and leadership.

### FLL CORE VALUES

- » We are a team;
- » We do the work to find solutions with guidance from our coaches and mentors;
- » We honour the spirit of friendly competition;
- » What we discover is more important than what we win;
- » We share our experiences with others;
- » We display gracious professionalism in everything we do; and
- » We have fun.

### GAINING THE FLL EXPERIENCE

Through their participation, children develop valuable life skills and discover exciting career possibilities while learning that they can make a positive contribution to society.

### CHILDREN AGES NINE TO 14 GET TO:

- » Strategize, design, build, program and test a robot using LEGO Mindstorms technology;
- » Create innovative solutions for challenges facing today's scientists as part of their research project;
- » Apply real-world math and science concepts;
- » Develop employment and life skills including critical thinking, time management, collaboration and communication while becoming more self-confident;
- » Engage in team activities guided by FLL core values;
- » Become involved in their local and global community;
- » Choose to participate in official tournaments and local events coordinated by their community;
- » Attempt to qualify for an invitation to the World Festival.





## About First®

Based in Manchester, New Hampshire, For Inspiration and Recognition of Science and Technology (FIRST) was founded in 1989 by inventor Dean Kamen to inspire young people's interest and participation in science and technology. FIRST is supported by a strong network of sponsors and volunteers.

FIRST provides the FIRST Robotics Competition (FRC) for students in grades 9 to 12 (ages 14 to 18), the FIRST LEGO League (FLL) for grades 4 to 8 (ages nine to 14), and the Junior FIRST LEGO League (Jr. FLL) for kindergarten to Grade 3 (ages six to nine). For more information, visit [www.firstroboticscanada.org](http://www.firstroboticscanada.org).

### ABOUT THE LEGO GROUP

The LEGO Group, a privately-held, family-owned company based in Billund, Denmark, is one of the world's leading manufacturers of high-quality, creative educational play materials for children. The company is committed to the development of children's creative and imaginative abilities, and its employees are guided by the motto adopted in the 1930s by founder Ole Kirk Christiansen: "Only the best is good enough."

For more information, visit [www.lego.com](http://www.lego.com).

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## Tournament Schedule

- 7:30 a.m. Pits open
- 8:00 a.m. Judging and practice matches begin
- 10:10 a.m. Opening ceremonies
- 10:50 a.m. Judging and practice matches continue
- 11:50 a.m. Lunch
- 1:00 p.m. Judging callbacks
- 2:00 p.m. Official robot matches begin
- 5:00 p.m. Awards and closing ceremonies

**Master of Ceremonies:** Tony Selema and Paul Offor

**Ambassador of Fun:** Krista Peralto

# Room Locations

All ceremonies and robot competitions take place in the main gym of the Physical Activities Complex (PAC) while all of the judging is in the Math and Computing (MC) building.

## BUILDING CODE LEGEND

- » **PAC** — Physical Activities Complex (main gym area)
- » **MC** — Rooms beginning with the letters **MC** are located in the Math and Computing building

LANE	CATEGORY	ROOM NO.
<b>Lane 1</b>	Project	MC 2034
	Design	MC 2035
	Values	MC 2038
<b>Lane 2</b>	Project	MC 4020
	Design	MC 4021
	Values	MC 4064
<b>Lane 3</b>	Project	MC 4061
	Design	MC 4063
	Values	MC 4059
<b>Lane 4</b>	Project	MC 4045
	Design	MC 4040
	Values	MC 4044
<b>Lane 5</b>	Project	MC 2017
	Design	MC 2066
	Values	MC 2054

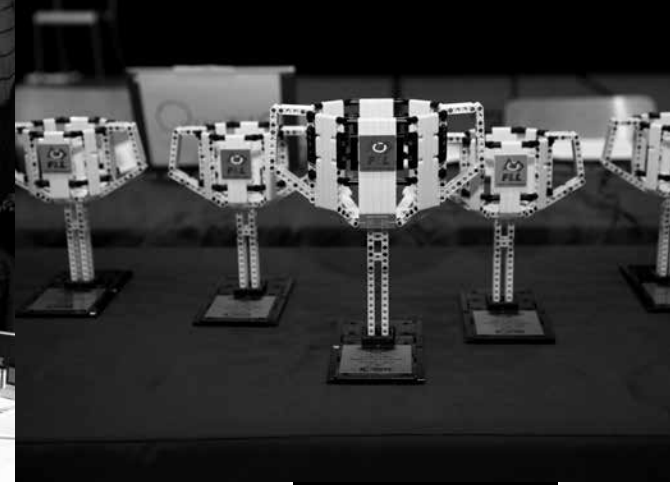
**Volunteer assignments/lunchroom:** Blue Activity area  
**Volunteer and executive lounge:** PAC 2021  
**Judges' deliberation rooms:** MC 1085

**Please note:** Family and spectators are requested to stay outside of the judging room and volunteer rooms. These areas are for team members, coaches and mentors only. Coaches may film the children's presentations but not the Q&A period or the Core Values Activity.

# Participating Teams — West Championship

Team #	Team Name	School or Organization	Coach's Name
891	Garbage Geeks	Tomken Road Middle School, SciTech Program	Melissa Perez
893	SciNadoes	Tomken Road Middle School, SciTech Program	David Jansma
897	Down 2 Earth	Tomken Road Middle School, SciTech Program	Stewart Hynes
900	Seismonauts	Tomken Road Middle School, SciTech Program	Ashleah Genovy
1471	Market Lane RetroBots	Market Lane P.S.	Chris Fabbri
2117	LU Legonauts	Laurentian University	Stephanie Langille
3268	Robot Rampagers	Kitchener Waterloo Bilingual School	Lina Chaaban
3274	KW Storm Chasers	Kitchener Waterloo Bilingual School	Paula Pfeifle
3312	The Fireflies	Independent	John Catricala
3948	The Rusty Bolts	Independent	Dan Silivestru
4003	Robot Notre-Dame-du-Sault	Notre-Dame-du-Sault	Pascale Crépault-Breckenridge
4267	Stars	Worthington Public School	Derek Lambert
4420	Category 10	Humber Valley Village JMS	Dino Sbrocca
4512	Rosedale Fury Fighters	Rosedale Public School	Tony Schoahs
4706	The Jack Frosties	Mentor College	Ryan Dorey
5574	Lescon Lego Smurfs	Lescon Public School	Charles Offor
6946	Lego My Lego	Independent	Katherin O'Hara
7855	The Boisterous BEEP'ers	Independent	John Catricala
7884	K-9	Caledon Community Team	Dave Rajnauth
8355	The Tornado CATS	Independent	John Catricala

Team #	Team Name	School or Organization	Coach's Name
8738	Here Comes Trouble!	Garson Robotics Academy	Jean-Luc Larouche
9278	The KIN-necks	Independent	John Catricala
9390	Storm Breakers	Independent	George Sellner
9786	SKK BOTS	Canadian Association for Girls in Science (CAGIS) Kitchener-Waterloo-Guelph Chapter	Farzana Yusufali
9922	BCA BOTS	Burlington Christian Academy	Karen Besseling
10597	St. Michael's Justice League of Lego	St. Michael's Catholic School	Dave Woodill
12463	The Robot Rocketeers	Pretty River Academy	Katherine Andersen
12527	Technical Difficulties	Mount Royal Public School	Lisa Crook
14015	Aweres Blizzards	Aweres Public School	Brenda Gregoire
15784	RoboDolphins	John Dearness Public School	Larry Breakwell
16046	Storm Dragons	Millwood Junior School (Toronto District School Board)	Konstantin Osokin
16541	A2I Eaglebots	A2I Academy	Tammy Russo
16544	The Dominators	Bloorlea Middle School	Sarah Jacinto
16621	The Thomsonators	St. Andrew Catholic Elementary	Paul Thomson
16818	Terra Bots	St Matthew Catholic Elementary School	Ana Lucia Watson
16831	THE BIONICALS	Oakville Team	Utkarsh Kumar
17112	Team da Vinci	Erin Centre Middle School	Melissa Claxton
17119	Mustangs	Morning Star Middle School	Jesse Teachman
17667	Falcon Robotics	Our Lady of Fatima School (SCCDSB)	Dan Rolo
17708	Robolab	Bellewood School, GECSDB	Danielle Richer
18650	Innovation Stars	Health Quality Innovative Collaborative	Sanjeev Goel
15784	RoboDolphins	John Dearness Public School	Larry Breakwell



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## FLL Core Awards

### CHAMPION'S AWARD

This award recognizes a team that embodies the FLL experience, by fully embracing our Core Values while achieving excellence and innovation in both the Robot Game and Project.

### ROBOT AWARDS

**Mechanical Design** — This award recognizes a team that designs and develops a mechanically sound robot that is durable, efficient and highly capable of performing challenge missions.

**Programming** — This award recognizes a team that utilizes outstanding programming principles, including clear, concise and reusable code that allows their robot to perform challenge missions autonomously and consistently.

**Strategy and Innovation** — This award recognizes a team that uses solid engineering practices and a well-developed strategy to design and build an innovative, high performing robot.

**Robot Performance** — This award recognizes a team that scores the most points during the Robot Game. Teams have a chance to compete in at least three 2.5 minute matches and their highest score counts.



## PROJECT AWARDS

**Research** — This award recognizes a team that utilizes diverse resources to formulate an in-depth and comprehensive understanding of the problem they have identified.

**Innovative Solution** — This award recognizes a team’s solution that is exceptionally well-considered and creative, with good potential to solve the problem researched.

**Presentation** — This award recognizes a team that effectively communicates the problem they have identified and their proposed solution to both the judges and other potential supporters.

## CORE VALUES AWARDS

**Inspiration** — This award celebrates a team that is empowered by their FLL experience and displays extraordinary enthusiasm and spirit.

**Teamwork** — This award recognizes a team that is able to accomplish more together than they could as individuals through shared goals, strong communication, effective problem solving and excellent time management.

**Gracious Professionalism®** — This award recognizes a team whose members show each other and other teams respect at all times. They recognize that both friendly competition and mutual gain are possible, on and off the playing field.

## JUDGES AWARDS

During the course of competition the judges may encounter teams whose unique efforts, performance or dynamics merit recognition. Some teams have a story that sets them apart in a noteworthy way. Sometimes a team is so close to winning an award that the judges choose to give special recognition to the team. Judges Awards allow the freedom to recognize remarkable teams that stand out for reasons other than the Core Award categories.

Examples include:

### **Against All Odds or Overcoming Adversity or Perseverance** —

This award goes to the team that improvises and overcomes a difficult situation while still making a respectable showing, with an attitude that shows, “We can overcome incredible odds if we never give up, no matter what!”

**Rising Star** — This award recognizes a team that the judges notice and expect great things from in the future.

## SPECIAL RECOGNITION AWARDS

**Outstanding Volunteer Award** — The FLL program would not exist without its volunteers. This award honors an extraordinary volunteer(s) whose dedication to the FLL program has a positive impact on the team experience.

**Adult Coach/Mentor Award** — Many teams reach significant milestones thanks to their close relationship with an adult mentor. This award goes to the coach or mentor whose wisdom, guidance, and devotion are most clearly evident in the team’s discussion with the judges.

**Young Adult Mentor Award** — FLL presents this award to the young adult, high school or college mentor whose support, impact, inspiration, and guidance are most clearly evident in the team’s discussion with the judges.



# The Three Categories of FLL Competition

FLL teams compete in three categories, all of which are equally important:

1. **Robot Design** — How well a team demonstrates its understanding of robot design through building, programming and performance.
2. **Core Values** — How well a team demonstrates the integration of FLL core values in all aspects of the FLL experience.
3. **Project** — How well a team demonstrates its solution for a real-world problem, and the research behind its solution.

Teams that excel in all categories and demonstrate our core values compete for our highest honour — the Champion's Award.

## WHAT IS THE PROJECT?

In the project, teams research a real-world problem in the field of the challenge theme, create an innovative solution and share their findings in their community.

FLL is not just about building and competing with robots. FIRST encourages well-rounded teams because any successful engineering project requires a wide variety of skills. Through the project research, teams learn more about the science behind the challenge theme and better understand the work of professionals in that field.

Presenting this material allows the team members to showcase what they have achieved through their project, and is an opportunity to share the excitement of science and technology with others. It also offers an opportunity for team members to motivate others to act. Each team has five minutes, including setup, to present its project to a panel of judges.

## WHAT IS THE ROBOT GAME?

In the robot game, teams design, build, program and test autonomous robots that must perform a series of tasks, or missions within a two-and-a-half minute time limit. The game and its missions often symbolize solutions to some of the problems presented in the challenge theme. The missions are performed on a standard FLL Field, under a set of rules.



## Next Year's Challenge

(Coming August 2014)

### FLL WORLD CLASS: LEARNING UNLEASHED

What is the future of learning? FIRST LEGO League teams will find the answers. In the 2014 FLL WORLD CLASS<sup>SM</sup> Challenge, over 230,000 children ages 9 to 16 from over 70 countries will redesign how we gather knowledge and skills in the 21st century. Teams will teach adults about the ways that kids need and want to learn. Get ready for a whole new class.

FLL challenges kids to think like scientists and engineers. During the FLL WORLD CLASS season, teams will build, test, and program an autonomous robot using LEGO MINDSTORMS<sup>®</sup> to solve a set of missions in the Robot Game. They will also choose and solve a real-world question in the Project. Throughout their experience, teams will operate under FLL's signature set of Core Values.



## Planning Team

**Dave Ellis**, Director, FLL Ontario

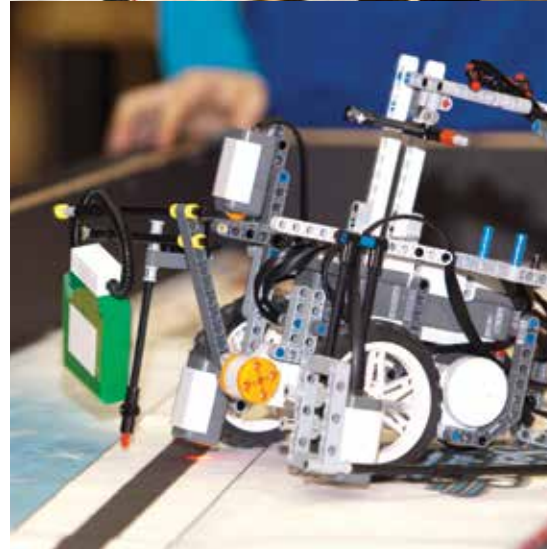
**Lynn Rampertab**, Tournament Scheduler, FLL Ontario

**Maud Gorbet**, Assistant Professor, Faculty of Engineering, UWaterloo

**Peter Teertstra**, Director, Sedra Student Design Centre, UWaterloo

**Peggy Scott**, Provincial Head Referee, FLL Ontario

**Calum Tsang**, Provincial Head Judge, FLL Ontario



The FLL Ontario Provincial Championship is supported by:

### Gold-level sponsors



### Silver-level sponsors



### In-kind sponsors

- Google
- HEXBugs
- Spectrum Educational Supplies Limited

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# FIRST® LEGO®

WEST ONTARIO CHAMPIONSHIPS

**A big thank you** goes out to all sponsors, volunteers, coaches, mentors, participants and families for their support of the FLL and UWaterloo initiatives. Your support is pivotal to promoting engineering, science and technology to the next generation.



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