

# FIRST ROBOTICS ONTARIO DISTRICT COMPETITION Durham College March 15-17, 2024





Greetings, FIRST<sup>®</sup> Robotics Competition teams and welcome to another year filled with creativity, big ideas and bold action!

We're thrilled to see you take the stage for CRESCENDOSM presented by Haas, part of the 2023-2024 crossprogram season, FIRST® IN SHOWSM presented by Qualcomm. This year, we're shining a spotlight on the role STEM plays in the arts and how it empowers young people, like you, to design and build a world of endless possibilities.

Take a moment to consider just how intertwined STEM and the arts often are. So much of the artistic content we produce and consume has been inspired and brought to life by STEM. It's our STEM skills that help us

design a logo, costume, or movie set from a blank canvas, 3-D print a sketch, light the stage for a photoshoot, or rock an arena with a jaw-dropping performance. Our skills and knowledge empower us to be creative, pursue our big ideas, and build what some may only dream of.

To our teams competing this year, congratulations. Your creative spirit, acts of *Gracious Professionalism*<sup>®</sup>, and collective passion for making a positive difference in the world have touched the hearts of your peers, mentors, local communities, and all of us here at *FIRST*.

And to the mentors, parents, volunteers, partners, sponsors, donors, alumni, and many supporters who invest in *FIRST* participants in countless ways: thank you. You empower students to explore their full potential, forge new paths, and find ways to make an impact, do good, and inspire others to do the same.

As you all step onto the competition stage, remember that *FIRST* is *More Than Robots*<sup>®</sup>. Your journey with *FIRST* will help you design your life's path, from building perseverance as you overcome obstacles to illuminating career paths you might not have considered – including those in the arts. Just ask our esteemed alumni, some of whom became audio engineers, architectural visualization specialists, VFX artists, cinematographers and more, all while remaining an integral part of our STEM community.

By embracing the connections between STEM and the arts, you're not only shaping the future of technology and science but pioneering the frontiers of human creativity.

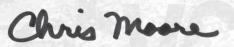
#### The boundaries of what's possible

are stretched and reshaped by your collective imagination and resilience, and we can't wait to see the wonders you'll create.

With that said – Lights, Camera, STEAM! Sincerely,

Kame

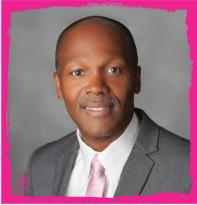
Dean Kamen, FIRST Founder



Chris Moore, FIRST CEO



Dean Kamen



**Chris Moore** 

# Welcome to the 2024 FIRST<sup>®</sup> Robotics Competition Durham College District Event

Dear competitors, educators and guests,

It is my pleasure to welcome you to Durham College (DC)! We are thrilled to once again be sponsoring and hosting young science, technology, engineering, and math (STEM) enthusiasts from across Ontario as they compete in the 2024 *FIRST®* Robotics Durham College District Competition.

It's an honour to witness the impressive talent and dedication of competitors as they come together to showcase their robotics skills. This year's theme, *FIRST* in Show, and competition game, CRESCENDO<sup>SM</sup> provide a captivating mission for participants this weekend. I'm looking forward to watching each team showcase their unique skills as they demonstrate their aptitude for critical thinking, problem-solving and innovation.

The *FIRST*<sup>®</sup> Robotics Durham College District Competition plays a valuable role in inspiring and encouraging students to explore and thrive in STEM education. At DC, we offer an innovative education for students interested in STEM fields with a focus on hands-on learning, exactly how competitors are learning this weekend. This helps our students develop the skills required to thrive in today's rapidly evolving technological landscape.

I am confident that the competition this weekend will provide a platform for the talented participants to showcase their creativity, teamwork and ingenuity. As they compete in this action-packed event, they will gain valuable experience, forge lifelong friendships, and discover their potential to make a significant impact in the world of robotics.

Congratulations to everyone competing this weekend, and I wish you the best of luck!

Sincerely,

Paine Rop

Dr. Elaine Popp President, Durham College

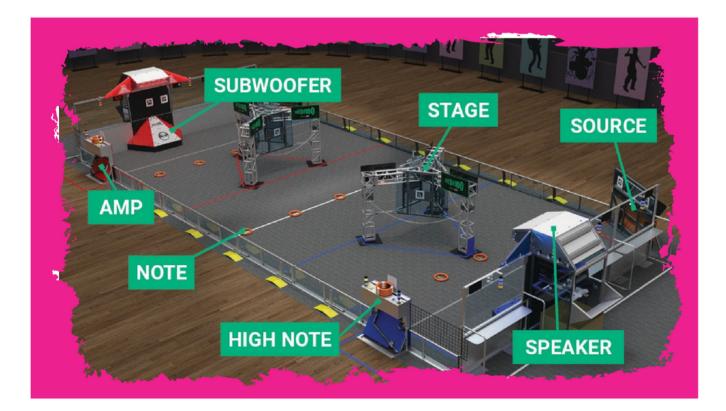




# Gameplay

Inspired by the art and experiences that entertain us and move usCRESCENDO<sup>SM</sup> presented by Haas will shine the spotlight on the impact that engineering and innovation have on art.

- Teams will use their STEM skills and creative power to turn up the volume as they design, build, and program their robots for action-packed game play.
- Each match begins with a 15-second autonomous period, during which robots operate only by preprogrammed instructions to move from their starting positions and score game pieces, called notes, into their two goals: the speaker and the amp. They also use this time to collect additional notes from around the field.
- In the remaining 2 minutes and 15 seconds, drivers control their robots and continue earning points through strategic match play. Once two notes are scored in an alliance's amp, the human player can hit a button to increase the value of notes scored in their speaker for 10 seconds.
- At the end of the match, robots race to climb on chain, score notes in a pocket called a trap, and harmonize by hanging multiple robots on a single chain. Humans throw high notes onto their microphones to boost points associated with robots on the corresponding chains.
- The alliance with the highest score at the end of the match wins!

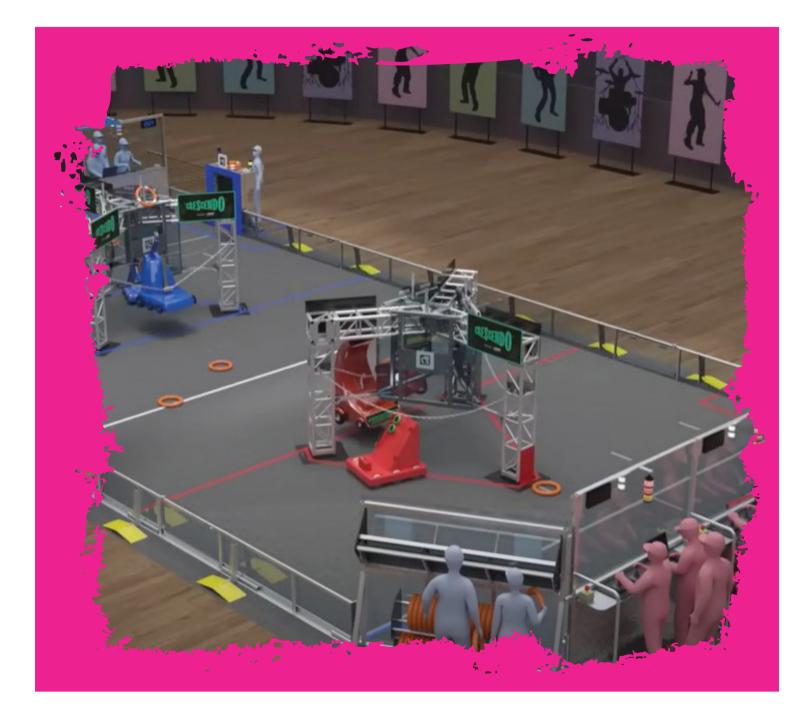


2024 *FIRST*<sup>®</sup> Robotics Competition | Game Animation

# View the 2024 game animation for the 2024*FIRST* Robotics Competition game, CRESCENDO.



Scan to View Animation



#### 2024 FIRST<sup>®</sup> Robotics Competition | Awards

# This is a complete list of *FIRST* Robotics Competition awards. Please note that different event types (e.g. Regional events, District Events, District Championships, Championship) offer a different set of awards. Not every award is presented at every *FIRST* Robotics Competition event.

#### Autonomous Award

Celebrates the team that has demonstrated consistent, reliable, high-performance robot operation during autonomously managed actions. Evaluation is based on the robot's ability to sense its surroundings, position itself or onboard mechanisms appropriately, and execute tasks.

#### Creativity Award sponsored by Rockwell Automation

Celebrates creativity that enhances strategy of play and was intentionally designed and not discovered.

#### **Digital Animation Award**

sponsored by AutomationDirect.com Celebrates the art of the digital animation and its close relationship to STEAM (Science, Technology, Engineering, Art, and Mathematics).

#### Engineering Inspiration Award

Celebrates outstanding success in advancing respect and appreciation for engineering within a team's school and community.

#### Excellence in Engineering Award

Celebrates the team that demonstrates a professional approach to the design process.

#### Finalist

Celebrates the Alliance that makes it to the final match of the competition.

#### FIRST Dean's List Award

Celebrates outstanding student leaders whose passion for and effectiveness at attaining *FIRST* ideals is exemplary.

#### FIRST Impact Award

The most prestigious award at *FIRST*, it honors the team that best represents a model for other teams to emulate and best embodies the purpose and goals of *FIRST*.

#### Founder's Award

Recognizes the organization or individual that has contributed significantly to the growth of FIRST.

#### Gracious Professionalism Award

Celebrates outstanding demonstration of FIRST Core Values such as continuous Gracious Professionalism working together both on and off the playing field.

#### Imagery Award in honor of Jack Kamen

In honor of Jack Kamen, Dean's father, for his dedication to art and illustration and his devotion to *FIRST*. This award celebrates attractiveness in engineering and outstanding visual aesthetic integration of machine and team appearance.

#### Industrial Design Award sponsored by

General Motors Celebrates the team that demonstrates industrial design principles, striking a balance between form, function, and aesthetics.

#### Innovation in Control Award

Celebrates an innovative control system or application of control components – electrical, mechanical, or software – to provide unique machine functions.

#### Judges' Award

During the course of the competition, the judging panel may decide a team's unique efforts, performance, or dynamics merit recognition.

#### Quality Award

Celebrates machine robustness in concept and fabrication.

#### Rookie All-Star Award

Celebrates the rookie team exemplifying a young but strong partnership effort, as well as implementing the mission of *FIRST* to inspire students to learn more about science and technology.

#### **Rookie Inspiration Award**

Celebrates a rookie team's outstanding success in advancing respect and appreciation for engineering and engineers, both within their school, as well as in their community.

#### Safety Animation Award sponsored by UL Solutions

Recognizes the team that submits a short animated film that best promotes the current season's team safety focus.

#### Team Spirit Award

Celebrates extraordinary enthusiasm and spirit through exceptional partnership and teamwork furthering the objectives of *FIRST*.

#### Team Sustainability Award sponsored by Dow

Celebrates and recognizes a team which has developed sustainable practices to have a positive environmental impact and achieve long-term continuity.

#### Volunteer of the Year Award

Presented to an individual, business, or organization that consistently excels in their efforts, with proven results in the areas of impact, leadership, personal commitment, community, and historical contributions.

#### Winner

Celebrates the Alliance that wins the competition.

#### Woodie Flowers Finalist Award

Presented to an outstanding Mentor in the robotics competition who best leads, inspires, teaches, and empowers their team using excellent communication skills.



# 2024 SEASON FACTS





(AS OF 01/04/2024)

- 33rd Season Game: CRESCENDO <sup>SM</sup> presented by Haas
- 3,468 Teams
  3,141 Veteran Teams
  327 Rookie Teams
- . 86,700+ Youth Team Members
- . 27,700+ Mentors/Adult Supporters
- . 28 countries:

Australia (36 teams)Israel (62 teams) Azerbaijan (1 team)Japan (6 teams) Belize (1 team)Mexico (86 teams) Brazil (57 teams)Netherlands (3 teams) Bulgaria (1 team)Panama (1 team) Canada (202 teams)Philippines (1 team) China (22 teams)Poland (1 team) Chinese Taipei (28 teams)Romania (1 team) Colombia (1 team)Singapore (1 team) Croatia (1 team)Singapore (1 team) Croatia (1 team)Sweden (1 team) Czech Republic (2 teams)Switzerland (1 team) Dominican Republic (2 teams)Türkiye (138 teams) France (3 teams)United Kingdom (3 teams) India (6 teams)USA (2,800 teams)

#### **EVENTS**

- 144 Live Kickoff events and streaming on FIRSTtv
- \* (01/06/2024) 62 Regional Events
- 98 District Events
- 11 District Championships:
- Chesapeake, Indiana, Israel, Michigan, Mid-Atlantic, New England, North Carolina, Ontario, Pacific Northwest, Peachtree, Texas/New Mexico Districts
- 1 FIRST® Championship Event: April 17 20, 2024

#### KIT OF PARTS FACTS

- Items from more than 65 in-kind donors
- Nearly 500 different items distributed via the Kit of Parts system
- More than 72 tons of Kickoff Kit materials shipped all over the world by FedEx (weighing more than 150 grand pianos)

#### **ROBOT FACTS**

- Weight: up to approximately 125 lbs.
- total Robots are remotely controlled
- Powered by a 12-volt battery

#### **FIELD FACTS**

- Playing area: 27' W x 54' L
- Teams score game pieces, called Notes, in their Amp and Speaker
- As time runs out, robots race to get onstage and deliver Notes to their Traps

#### **ALUMNI**

- Participants and alumni of FIRST programs gain access to education and career discovery opportunities, connections to exclusive scholarships and employers, and a place in the FIRST community for life.
- Visit firstinspires.org/alumni





8

#### For the latest information on these events, visit frc-events.firstinspires.org/

#### Feb 26-27

ISR District Event #1 Hadera, Israel

#### Feb 28-29

ISR District Event #2 Hadera, Israel

#### Feb 28-Mar 02

Canadian Pacific Regional Victoria, BC Brazil Regional Brazilia, Brazil

Festival de Robotique Regional Montreal, QC

Greater Pittsburgh Regional Pittsburgh, PA

Lake Superior Regional Duluth, MN

Northern Lights Regional Duluth, MN

Regional Monterrey Monterrey, Mexico

South Florida Regional Fort Lauderdale, FL

Utah Regional West Valley City, UT

#### Feb 29-Mar 02

FIT District Katy Event Katy, TX FIT District Waco Event Waco, TX FIM District Kettering University Event #1 Flint, MI FIM District Milford Event Highland, MI NE District Granite State Event Salem, NH PNW District Clackamas Academy Event Oregon City, OR

#### Feb 29-Mar 03

Hueneme Port Regional Port Hueneme, CA Silicon Valley Regional San Jose, CA

#### Mar 01-03

CHS District Ashland VA Event Ashland, VA CHS District Blacksburg VA Event Blacksburg, VA FMA District Hatboro-Horsham Event Horsham, PA FMA District Mount Olive Event Flanders, NJ FIN District Mishawaka Event Mishawak, IN FIM District Battle Creek Event Battle Creek, MI FIM District Berrien Springs Event Berrien Springs, MI FIM District Jackson at Columbia Event Brooklyn, MI NE District Hartford Event Hartford, CT FNC District Orange County Event Chapel Hill, NC PNW District Glacier Peak Event Snohomish, WA

#### <u>Mar 03-06</u>

Smoky Mountains Regional Knoxville, TN

#### Mar 05-07

lstanbul Regional Sarıyer, Türkiye

#### Mar 06-09

Arkansas Regional Searcy, AR Central Missouri Regional Sedalia, MO Great Northern Regional Grand Forks, ND Green Country Regional Tulsa, OK

Hudson Valley Regional Suffern, NY

#### <u>Mar 07-09</u>

Dalton, GA

FIT District Belton Event Belton, TX FIM District Belleville Event Belleville, MI FIM District Escanaba Event Escanaba, MI FIM District Kettering University Event #2 Flint, MI FIM District St. Joseph Event St. Joseph, MI PNW District Oregon State Fairgrounds Event Salem, OR PCH District Anderson Event presented by MAGNA Anderson, SC PCH District Dalton Event

#### Mar 07-10

San Francisco Regional San Francisco, CA Ventura County Regional Port Hueneme, CA

#### <u>Mar 08-10</u>

CHS District Portsmouth VA Event Portsmouth, VA FIT District Plano Event Plano, TX FIM District Woodhaven Event Brownstown Charter Twp, MI FMA District Allentown Event Allentown, NJ FMA District Seneca Event Tabernacle, NJ FIM District Lake City Event Lake City, MI NE District BSU Event Bridgewater, MA **NE District Waterbury Event** Waterbury, CT **FNC District UNC Pembroke Event** Pembroke, NC **ONT District Centennial College** Event Scarborough, ON **ONT District Newmarket Complex** Event Newmarket ON **PNW District Auburn Event** Auburn, WA **Bosphorus Regional** Sarıyer, Türkiye

#### Mar 11-12

ISR District Event #3 Hadera, Israel

#### <u>Mar 13-14</u>

ISR District Event #4 Hadera, Israel

#### <u>Mar 13-16</u>

Arizona Valley Regional Scottsdale, AZ Central Illinois Regional Peoria, IL Finger Lakes Regional

Rochester, NY

Heartland Regional Shawnee, KS

Magnolia Regional Laurel, MS

Regional Hermosillo Hermosillo, Mexico Sacramento Regional Elk Grove, CA Tallahassee Regional Tallahassee, FL

#### <u>Mar 14-16</u>

FIT District Fort Worth Event Fort Worth, TX FIT District San Antonio Event San Antonio, TX

FIM District LSSU Event Sault Ste. Marie, MI

FIM District Muskegon Event Muskegon, MI

FIM District Traverse City Event Traverse City, MI

FIM District Wayne State Event Detroit, MI

NE District URI Event Kingston, RI

PNW District SunDome Event Yakima, WA

#### Mar 14-17

Los Angeles Regional El Segundo, CA Wisconsin Regional Milwaukee, WI

#### Mar 15-17

CHS District Glen Allen VA Event Glen Allen, VA CHS District Severn MD Event Severn, MD FMA District Montgomery Event Skillman, NJ FMA District Springside Chestnut Hill Event Philadelphia, PA **FIN District Columbus Event** Columbus, IN FIM District Ann Arbor Event Ann Arbor, MI NE District North Shore Event Reading, MA **NE District Pine Tree Event** Lewiston, ME FNC District UNC Asheville Event Asheville, NC ONT District Durham College Event Oshawa, ON **ONT District Georgian Event** Barrie, ON PNW District Bonney Lake Event Bonney Lake, WA PCH District Gwinnett Event Lawrenceville, GA

## 2024 FIRST<sup>®</sup> Robotics Competition | Events

For the latest information on these events, visit frc-events.firstinspires.org/

Southern Cross Regional South Windsor, Australia

#### Mar 18-20

ONT District Humber College Event Toronto, ON

#### Mar 19-21

FIRST Israel District Championship

Jerusalem, Israel Haliç Regional Sarıyer, Türkiye

#### Mar 20-23

Arizona East Regional Tempe, AZ **Buckeye Regional** Cleveland, OH **Colorado Regional** Denver, CO FIRST Long Island Regional Hempstead, NY Idaho Regional Nampa, ID Iowa Regional Cedar Falls, IA New York Tech Valley Regional Albany, NY **Orlando Regional** Orlando, FL Regional Laguna presented by Peñoles Torreon, Mexico St. Louis Regional St. Louis, MO

#### <u>Mar 21-23</u>

FIT District Dallas Event Dallas, TX FIM District Lansing Event Mason, MI FIM District Midland Event Midland, MI FIM District West Michigan Event Allendale, MI ONT District University of Waterloo Event Waterloo, ON PNW District Wilsonville Event Wilsonville, OR PCH District Carrollton Event Carrollton, GA PCH District Charleston Event N. Charleston, SC

#### Mar 21-24

Central Valley Regional Fresno, CA San Diego Regional presented by Qualcomm La Jolla, CA Mar 22-24

CHS District Falls Church VA Event presented by Department of Energy Falls Church, VA CHS District Owings Mills MD Event Owings Mills, MD FIT District Houston Event Houston, TX FMA District Bensalem Event Bensalem, PA FMA District Warren Hills Event Washington, NJ **FIN District Plainfield Event** presented by Carrier Plainfield. IN FIM District Livonia Event Livonia, MI FIM District Troy Event #1 Trov. MI NE District Greater Boston Event Revere, MA NE District Western NE Event Springfield, MA FNC District Mecklenburg County Event Charlotte, NC FNC District Wake County Event Wake Forest, NC **ONT District North Bay Event** North Bay, ON **PNW District Sammamish Event** Bellevue, WA Marmara Regional Sarıyer, Türkiye

#### <u>Mar 27-30</u>

Las Vegas Regional Las Vegas, NV Midwest Regional Chicago, IL

Monterey Bay Regional Seaside, CA

Orange County Regional Costa Mesa, CA

#### <u>Mar 28-30</u>

FIT District Amarillo Event Amarillo, TX

FIT District Space City @ Friendswood Event Friendswood, TX

FIM District Kentwood Event Kentwood, MI FIM District Macomb Community College Event Sterling Heights, MI

FIM District Central Michigan University Event Mt. Pleasant. MI

FIM District Renaissance Event Detroit, MI FIM District Troy Event #2 Troy, MI FIN District Washington Event presented by Toyota

Washington, IN NE District UNH Event Durham, NH ONT District McMaster University Hamilton, ON ONT District Windsor Essex Great Lakes Event Windsor, ON PCH District Albany Event Albany, GA

#### Mar 29-31

NE District WPI Event Worcester, MA

#### Apr 03-06

FIRST In Texas District Championship Houston, TX

New England *FIRST* District Championship West Springfield, MA

FIRST Ontario Provincial Championship Mississauga, ON

Pacific Northwest *FIRST* District Championship Portland, OR Aerospace Valley Regional Lancaster, CA

Bayou Regional Kenner, LA

Greater Kansas City Regional Lee's Summit, MO

Hawaii Regional Honolulu, HI Miami Valley Regional Cincinnati, OH Minnesota 10,000 Lakes Regional Minneapolis, MN

Oklahoma Regional Oklahoma City, OK

Rocket City Regional Huntsville, AL

Seven Rivers Regional La Crosse, WI

#### Apr 04-06

*FIRST* Mid-Atlantic District Championship Bethlehem, PA

FIRST in Michigan State Championship University Center, MI Peachtree District Championship Macon, GA

#### Apr 04-07

FIRST Chesapeake District Championship

Petersburg, VA East Bay Regional Berkeley, CA Minnesota Granite City Regional St. Cloud, MN New York City Regional New York, NY

#### Apr 05-07

FIRST Indiana State Championship Lafayette, IN

FIRST North Carolina District State Championship Greenville, NC

April 17-20

2024 *FIRST* Championship presented by BAE Systems Houston, TX

#### Abbreviation Key

- CHS *FIRST* Chesapeake FIM – *FIRST* in Michigan
- FMA FIRST Mid-Atlantic
- FNC FIRST North Carolina
- FTA *FIRST* in Texas
- FIN *FIRST* in Indiana
- NE New England FIRST
- ONT FIRST Ontario
- PCH Peachtree
- PNW Pacific Northwest
- ISR FIRST Israel

2024 FIRST<sup>®</sup> Robotics Competition Durham College District Event | Team Spotlights

10	$\rightarrow$		$\bigwedge$	
Team Num	ber Team School/Organization	Nickname	City	Rookie Year
Canada— D	urham College District Event			
188	EM Dynamics/DevCycle/CGI/Forge Automation/Life Sciences Ontario/Toronto District School Board&Woburn Collegiate Institute	Blizzard	Toronto	1998
781	Bruce Power/Kinetic Knights Youth Robotics&Family/Community	Kinetic Knights	Kincardine	2002
1241	General Motors/Pratt & Whitney Canada/Johnston Industrial Plastics Limited/CSC/Zerox/DBG Canada Limited/Symcor/Rev Creations/Rakla Tires/Click N Print/Trans Canada/99Cent Depot/Dreams Convention Center/Studica/C of Mississauga/Peel District School Board&Rick Hansen S.S	THEORY6 City	Mississauga	2004
1285	Pratt & Whittney/GM Canada/Johnston Industrial Plastics/Studica/CSC/Tanknology/Zerox/DE Canada Limited/Symcor/Rev Creations/Rak Tires/Click N Print/99Cent Depot/City of Mississauga/Peel District School Board&Ric hansen S.S	da	Mississauga	2004
1360	Gyptech/TC Energy/Studica/Ford Motor Company/Pratt & Whitney Canada/Rockwel Automation/Oakville Community Foundation&Oakville Community FIRST Robotics	Orbit Robotics	Oakville	2004
2013	Linear Automation/MPC   Molded Precision Components/Weld Experts/Stainless Outfitters/Osborn Model Kits/Black Controls/JT's Powersports/Parks Composites/Maiden Family Auto Care/Creemore Foodland/New Lowell Legic The Stayner Lions and the Rotary Club of Wasaga Beach./Inzane planet/Clearview Township&Family/Community		New Lowell	2007
2609	Synnex/Linamar Corporation/Michelin/Wellington Catholic School Board&Our Lady of Lourdes CHS	BeaverworX	Guelph	2008
2634	Pratt and Whitney Canada/Computer Scien Corp&Chaminade College	ces The Gryphons	North York	2008
2708	Novelis/Queen's University: Faculty of Engineering and Applied Science/Kinarm/Limestone District School Board/Princess Auto/Kingston Robotics Lab&LIMESTONE DISTRICT PUBLIC BOA	Lake Effect Robotics RD	Kingston	2009
2935	Endava Inc/Humber College/North Albion Collegiate Institute/The Rotary Club of Etobicoke/Gurcharan Singh/Michael Widener&North Albion Collegiate Institute	NACI Robotics	Toronto	2009

2024 FIRST® Robotics Competition Durham College District Event Team Spotlights

1

am Numb	er Team School/Organization	Nickname	City	Rookie Year
anada–	– Durham College District Event	- Cont		
3543	Ontario Power Generation/Renfrew District School Board/Deer Fence Canada Ltd/Tony Graham Toyota/Carleton University&Arnprior District High School	C4 Robotics	Arnprior	2011
5036	Honda Canada Foundation/ACE Climatic Wind Tunnel/TDSB/Argosy Foundation&Sir Wilfrid Laurier Collegiate Institute	1 The Robo Devils	Scarborough	2014
5406	HWCDSB/John Deere Canada/HATCH/Arcelor-Mittal Dofasco/Jantz Canada/Rev Robotics&Bishop Ryan Catholic Secondary School	Celt-X	Hamilton	2015
5460	General Motors Corporation/Lapeer Community Schools/Mi Dept of Education/Cypress Intergration Solutions, Inc.&Lapeer High School&Center for Innovation	Strike Zone	Lapeer	2015
5596	Modern Machine & Tool Ltd./Boeing/RBC Investments/T.C.D.S.B Specilaist High Skills Major & Family/Community & Mary Ward C.H.S.	Wolverine Robotics	Toronto	2015
5689	St. Clair College/Enbridge/Ahcom Shriners/Tek Savvy/Ursuline Sisters of Chatham/AECON & Family/Community	CK Cyber Pack	Chatham	2015
6070	Erin Mills Mazda/Genius Tools/Gene Haas Foundation/Krembil Foundation/Bempro /RBC/Nye Manufacturing/Princess Auto/Agile Manufacturing/Zafin&Glenforest Secondary School	Gryphon Machine	Mississauga	2016
6110	Safran /Ontario Power Generation/Enbridge/Peters Sterling Inc/GM&Archbishop Denis O' Connor	Doc Botics	Ajax	2016
6866	Sable Metal Fabrication & Family/Community	Markham Space Invaders	Markham	2018
7136	Urban Digital Solutions/Mera Window Fasions/Six Brothers Stables/Waterloo Electro-Plating/Toronto District School Board&Thistletown Collegiate Institute	Twisted Frames	Etobicoke	2023
7712	ACCN/FIRST/Lassonde School of Engineering and York University&African Canadian Christian Network	ACCN UMOJA	Scarborough	2019

2024 FIRST<sup>®</sup> Robotics Competition Durham College District Event | Team Spotlights

		XX	$\rightarrow$		12
Team Nun	nber Team School/Organization	Nickname	City	Rookie Year	
Canada	— Durham College District Event -	Cont			
7902	Sable Metal Fabrication Inc./The Remington Group/MPR Advisors (Planning and Appraisal)/FIRST Canada/Honda Canada Foundation/Green Infrastructure Partners Inc./Box Grove Dental Care/Monster Mobile/Student Scholars/Metal Supermarkets/Promopays/Markham Trophy Inc./Princess Auto/Orbit Robotics/Solidworks/Bild&Family/Community	Markham FireBirds	Markham	2019	
8731	Lindsay Buick GMC/BASF/CARStar/Centerline /FIRST Robotics FRC Registration Grant/CUSW - Canadian Union of Skilled Workers Local /The Rights Company/Thermoseal Kawartha Lakes&I.E. Weldon Secondary School	Wild WYRE	Lindsay	2022	
8884	Stone's Throw Design Inc./Deloitte Digital /Onyen ESG/PrintPOP/NSS Foundation/NSS School Council/Northern Student Affairs Council/TDSB/Northern Secondary School&Northern Secondary School	Knight Owls	Toronto	2022	
9569	Milliken Mills High School	Milliken Mills Silver Knights	Markham	2024	
9589	Mackenzie Community School	MCS Innovators	Deep River	2024	
9621	Bellum Legal/Jelcore Enterprises&Family/Community	Payload	Whitby	2024	

# 2024 Durham College District Event Schedule

Day 0 - March 15

2:30pm 4:30pm Team Load In (5 Team Reps) 4:30pm Pits Open, Inspections 5:30pm 8:00pm Filler Line Practice Matches 9:00pm Pits Close

# Day 1 - March 16

8:00am Pits Open, Inspections 8:30am Drivers meeting 9:15am 10:45am Practice Matches 11:00am Opening Ceremonies 11:30am 1:30pm Qualification Matches 1:30pm 2:30pm Lunch 2:30pm 7:00pm\* Qualification Matches 8:00pm Pits Close

# Day 2 - March 17

8:00am Pits Open 9:00am 9:30am Opening Ceremonies 9:30am 12:45pm\* Qualification Matches 1:00pm 1:30pm Alliance Selections 1:30pm 2:30pm Lunch 2:30pm 5:30pm Playoff Matches 5:30pm\*\* 7:00pm Awards / Closing Ceremonies 7:30pm Pits Close

\*Schedule subject to change. All times are estimated based on flow of rounds. See Pit Administration table for updated times. 2024 FIRST® Robotics Competition Durham College District Event

# Judges

# Led by Our Judge Advisors:

John Shaw Adjunct Professor Ontario Tech University

13

**Glenn Harvel** Professor **Ontario Tech University** 

**Abby Stevenson** Public and Community Relations Advanced Micro Devices, Inc.

**Andrew Norman Customer Technical Support** Specialist Ontario Tech University

**Brian Dorrepaal Retired Physics Teacher** 

### **Carol Gregoris**

### **Chitransh Vishway**

**Greater Toronto** Airports Authority

Dave Woodill Principal I&E Engineer Langtree Controls Limited

Drishti Jani Active Safety Validation Specialist General Motors

Jason Hawken **Director Technology Enablement** Group Advanced Micro Devices. Inc.

**Justin Chu** Software Engineer Advanced Micro Devices, Inc.

Lawrence Lupton **Retired Nuclear Engineer** Atomic Energy of Canada Limited **Kathleen Blair** 

Manager, IT Service Management and Governance **Durham College** 

**Manpreet Sandhu** Virtual Electromagnetics Engineer General Motors

Max Poschmann **Research Scientist** Canadian Nuclear Laboratories

**Michelle Lagerway** Professor and Program Coordinator - Faculty of Science, **Engineering & Information** Technology Durham College

Mitchell Vella **CTO - Co-founder** Moduleaf Inc.

Nick Charabaruk Mechanical Design Engineer **Kinectrics** 

# Raj Khurmi

**Richard McDonald Retired Distinguished Engineer IBM** Canada **Director of Space Place Canada** 

**Rick Szymczyk** Title Ontario Tech University, Senior Firmware Engineer Automotive Centre of Excellence Advanced Micro Devices, Inc.

Samira Karimi Sun Life Financials Sun Life

### Serena McQuaid-Noakes

Shawn Lin **DevOps Engineer TELUS Mobility** 

Soham Mitra Resident EngineerCandu Energy Inc.

**Tarandeep Mittal** Software Program Manager Advanced Micro Devices, Inc.

**Tim Clarke** PhD Student **Ontario Tech University** 

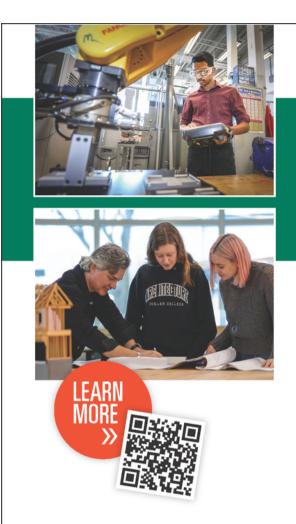
Utkarsh Saini

Software Developer -Vehicle Viewing GM

Victor Mazzuocco **Research and Development** Engineer Ontario Tech University /ACE

Victoria Bozinovski Councillor Town of Whitby

Xinhai Li



# DURHAM COLLEGE

# A FUTURE FULL OF POSSIBILITY

- » Artificial Intelligence Honours Bachelor Degree
- » Architectural Technology Advanced Diploma
- » Biomedical Engineering Technology
- » Civil Engineering Technology Advanced Diploma
- » Construction Management Honours Bachelor Degree
- » Electromechanical Engineering Technology Advanced Diploma

### DURHAMCOLLEGE.CA/EXPLORE

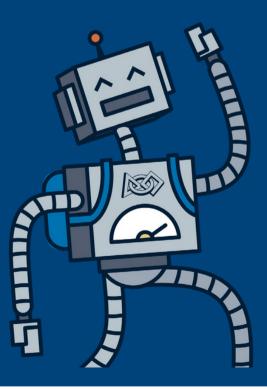
# The 2024 *FIRST*<sup>®</sup> Championship starts April 17

# Pack your bolts, bots, and bags!

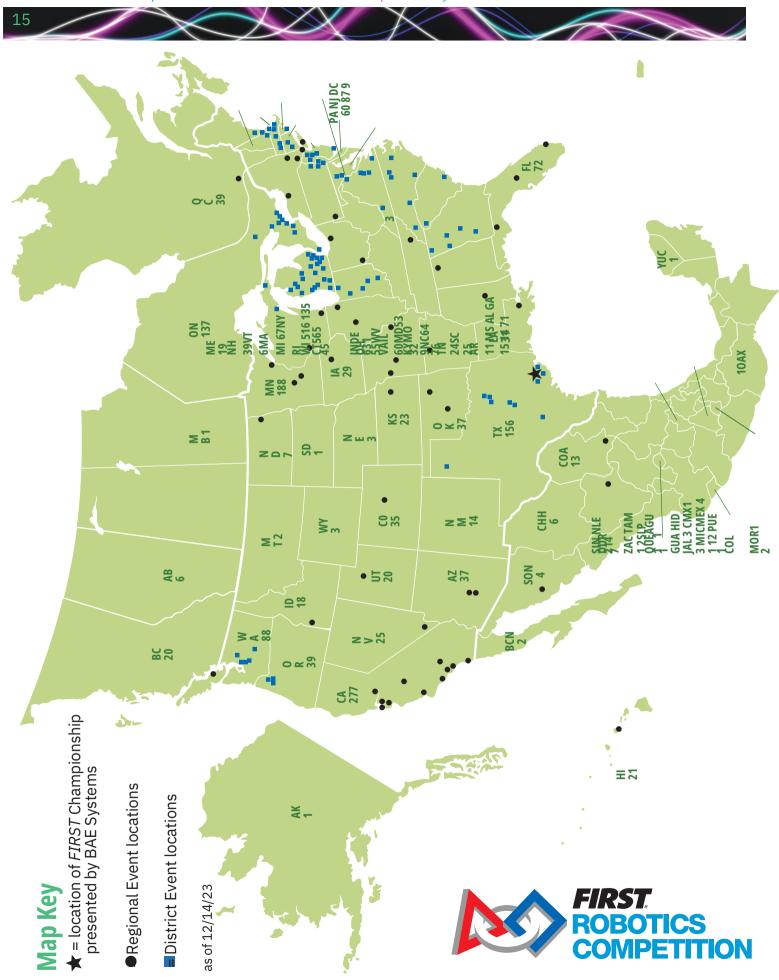
FIRST® has put together exclusive FIRST Championship housing discounts so you and your team can have the time of your lives when you get there. When you book with FIRST, you will:

- Stay close to the venue and other teams
- Receive guaranteed low rates at FIRST-reviewed hotels
- Enjoy convenient, FIRST-only contracted amenities at most hotels including complimentary Wi-Fi, breakfast, and parking
- Gain flexibility to make booking adjustments and pay later
  - Get reservation protection and assistance before, during, and after your stay if any unexpected challenges occur

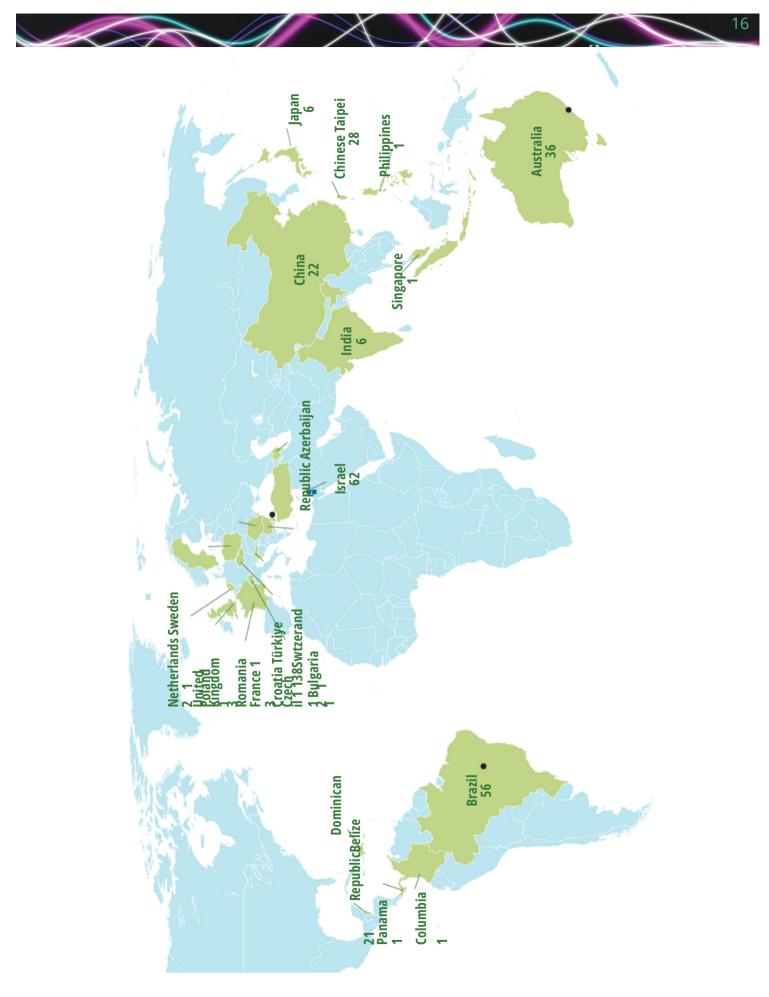
# Book your hotel reservations today! www.firstchampionship.org



*FIRST*<sup>®</sup> Robotics Competition Teams from North America | Teams by Location



#### FIRST Robotics Competition Teams from Around the World | Teams by Location



# Get Involved!

## Form a Team...

- $\Box$  Learn from engineering pros.
- □ Apply math and science concepts to design and build robots.
- □ Gain hands-on experience solving real-world problems.
- Learn about exciting science and technology careers.
- Make new friends.

## Be a Volunteer...

- Become a mentor.
- □ Organize an event or program.
- $\square$  Assist at a competition.
- □ Make a difference in young lives.

Contact: jaeleen.koscielski@firstroboticscanada.org

# Become a Team or Regional Sponsor...

- Provide financial support, equipment, parts, facilities, internships, or other services.
- Offer scholarships.
- Encourage employees to mentor or volunteer.
- Host an event.
- Build community goodwill.
- Inspire employees.
- $\square$  Help build a technical workforce.

Contact: arti.javeri@firstroboticscanada.org

## Donate!



- Help ensure thousands of students have access to unique learning experiences.
- □ Support the next generation of technological innovators and problem solvers.
  - Scan this code with your smartphone to launch our securenline donation page on your browser.

Thank you for your generosity!







"

Participants and alumni of *FIRST* programs gain access to education and career discovery opportunities, connections to exclusive scholarships and employers, and a place in the *FIRST* community for life.

firstroboticscanada.org/get-involved/alumni/

I remember reading "FIRST is more than robots" on the website as I registered for my robotics team. Being new to FIRST, I did not understand the meaning behind it. Now 7 years later, as a FIRST Alumni, this phrase defines my journey. For myself, FIRST is about community. I have made long-lasting friendships and acquired many skills that make me the leader I am today. As an alum, I'm able to witness just how far the FIRST community extends, and network you gain access to. There is this automatic bond when you know someone who has also gone through the FIRST program. My time as a FIRST participant helped reinforce my values and inspired me to purse a career in Engineering at the University of Waterloo.



MEHAK DHALIWAL FIRST Canada Youth Council Alum Systems Design Engineering student at the University of Waterloo

2024 FIRST® Robotics Competition Durham College District Event

# FIRST Volunteers Inspiring the Future Since 1992

The Durham College District Event relies on dedicated volunteers and appreciates the contribution of time from everyone who participates.From the expertise of veteran volunteers who return year after year, to the enthusiasm of first-timers, volunteers are the critical component that make our events successful. A special thank you to the members of the Newmarket Complex District Event planning committee, who work tirelessly to plan this event each year.













# We are not using kids to build robots. We are using robots to build kids.

– Dean Kamen, Founder, FIRST®



Help FIRST® Canada provide unique, handson STEM learning experiences to millions of students!

www.firstroboticscanada.org/donate

Your contribution is appreciated. Thanks for joining FIRST Canada as we create a culture that celebrates science and technology!

DANTH RAPP.RS



# FIRST®— A Suite of Hands-On, STEM Learning Programs

FIRST® is the world's leading youth-serving nonprofit advancing STEM education. For over 30 years, students from all walks of life have developed self-confidence in STEM and valuable, real-world skills through FIRST that open pathways to a better future.

Through a suite of team-based robotics challenges and backed by a global network of mentors, coaches, volunteers, alumni, and sponsors, FIRST helps young people discover a passion for STEM and develop the skills they'll need to succeed in today's competitive workforce.

Children can start their journey with FIRST® LEGO® League and progress through FIRST® Tech Challenge and *FIRST*® Robotics Competition, or join any of our three programs based on age or grade

**AGES 12-18** 

GRADES 7-12



#### Young Innovators Use Skills and Imagination to Solve Problems as a Team

*FIRST* LEGO League introduces STEM to children through fun, exciting handson learning. Participants gain real-world problem-solving experiences through a guided, global robotics program, helping today's students and teachers build a better future together. *FIRST* LEGO League's three age-appropriate divisions inspire youth to experiment and grow their critical thinking, coding, and design skills through hands-on STEM learning and robotics.

#### It's Way More Than Building Robots

FIRST Tech Challenge students learn to think like engineers. Teams design, build, and program robots to compete in an alliance format against other teams. Robots are built from a reusable platform, powered by Android technology, and can be coded using a variety of levels of Java-based programming Participants and alumni have access to career discovery opportunities, networking, and the *FIRST* Scholarship Program.





#### An Exciting Sport Built Around the World of STEM

*FIRST* Robotics Competition teams design, program, and build a robot starting with a standard kit of parts and common set of rules to play in a themed head-to-head challenge. Teams also build a brand, develop community partnerships for support, and work to promote STEM in their local community.

Participants and alumni have access to career discovery opportunities, networking, and the *FIRST* Scholarship Program.

\*Ages vary by country

At the heart of *FIRST* are its Core Values, which emphasize the contributions of others, friendly sportsmanship, teamwork, learning, and community involvement. These include Gracious Professionalism® (respect for others, being a good sport, and sharing what you learn) and Coopertition® (competing hard but also helping the other teams).

We'd like to thank our Sponsors and Partners for their commitment to the vision of FIRST® and who continue to help FIRST® grow!



FIRST\*, the FIRST\* logo, FIRST\* Robotics Competition, FIRST\* Tech Challenge, Coopertition\*, and Gracious Professionalism\* are trademarks of For Inspiration and Recognition of Science and Technology (FIRST). LEGO\* and MINDSTORMS\* are registered trademarks of LEGO Group. FIRST\* LEGO\* League and FIRST\* LEGO\* League Jr. are jointly held trademarks of FIRST and the LEGO Group. Other marks used here are the trademarks of their respective owners. ©2020-2022 FIRST. All rights reserved.