FIRST TECH CHALLENGE

2016 - 2017 SUPER-REGIONAL CHAMPIONSHIP

FIRST TECH CHALLENGE EAST

VELOCITY VORTEX℠

PRESENTING SPONSOR

QUALCOMM

East Super-Regional Championship

Presented by Rockwell Collins, Verizon Wireless,

and the Center for Energy Workforce Development

Scranton, PA

March 17-19, 2017

www.ftceast.org

FIRST

FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY

Welcome to the *FIRST*® Tech Challenge United States Super-Regional Championship Tournaments.

Teams in the United States advance to one of four Super-Regional Championship Tournaments through high achievement at a state or regional Championship event. *FIRST*® congratulates all the teams at this event for outstanding performance this season.

West Super-Regional Championship

Presented by Rockwell Collins, Qualcomm® Incorporated, Tesoro, Google.org and the Center for Energy Workforce Development
March 10-12, 2017
Tacoma Convention and Trade Center
Tacoma, WA

East Super-Regional Championship

Presented by Rockwell Collins, Verizon Wireless and the Center for Energy Workforce Development
March 17-19, 2017
University of Scranton
Scranton, PA

South Super-Regional Championship

Presented by Rockwell Collins, Southern Company Services and the Center for Energy Workforce Development
March 23-25, 2017
Classic Center
Athens, GA

North Super-Regional Championship

Presented by Rockwell Collins and the Center for Energy Workforce Development
March 30-April 1, 2017
Double Tree Hotel & US Cellular Center
Cedar Rapids, IA

An estimated 4,600 teams will compete at more than 500 League Meets, Qualifying, and Championship Tournaments taking place in the United States, Australia, Canada, China, Czech Republic, France, Germany, India, Mexico, Netherlands, New Zealand, Russia, South Korea, and Taiwan during the 2016-2017 season. Top teams from the Super-Regional Championships advance to the *FIRST*® Tech Challenge World Championship in Houston, Texas and St. L7.508ouis, Missouri in April. *FIRST*® Tech Challenge Sponsors include *FIRST*® Tech Challenge Season Presenting Sponsor Qualcomm Incorporated, *FIRST*® Tech Challenge Official Program Sponsor, Rockwell Collins, Inc. and *FIRST*® Tech Challenge Official IoT, CAD and Collaboration Software Sponsor, PTC, Inc.

FIRST® Tech Challenge East Super-Regional Event Supporters

B&W TEK

LOCKHEED MARTIN

FIRST LEGO LEAGUE JR. Ages 6-9 (Grades K-3) | FIRST LEGO LEAGUE Ages 9-16* *(Grades 4-8) | FIRST TECH CHALLENGE Ages 12-18 (Grades 7-12) | FIRST ROBOTICS COMPETITION Ages 14-18 (Grades 9-12)

WELCOME TO FIRST® TECH CHALLENGE

FIRST® Tech Challenge is designed for students in grades 7-12 to compete head to head using a sports model. Teams are responsible for designing, building, and programming their robots to compete in an alliance format against other teams. The robot kit is powered by Android technology, reusable from year-to-year and is programmed using Java. Teams, including Coaches, Mentors and Volunteers, are required to develop strategy and build robots based on sound engineering principles. Awards are given for the competition as well as for community outreach, design, and other real-world accomplishments.

"…to create a world where science and technology are celebrated…
where young people dream of becoming science and technology leaders."
- *FIRST* Founder, Dean Kamen

ABOUT FIRST TECH CHALLENGE

FIRST Tech Challenge is an exciting and fun global robotics program that ignites an enthusiasm for science, technology, and discovery in young people and teaches them STEM skills and concepts, principles of leadership, and how to work as a team.

The competitions are the result of focused brainstorming, dedicated mentoring, project timelines, and teamwork. Paired with technical mentors, teams learn from and play with the "pros" to experience engineering problem solving first-hand.

- Entices kids to think like scientists and engineers
- Provides a fun, creative, hands-on learning experience
- Teaches kids to experiment and overcome obstacles
- The skills they learn make math and science tangible, accessible and real
- Endorsed by the National Association of Secondary School Principals
- Teams learn to document their design ideas and discoveries
- Builds self-esteem and confidence
- 90% of participating students report learning how STEM can solve real-world problems

TOURNAMENT SCHEDULE

Friday, March 17

12:00 p.m.	Team Check-in, Pits Open
1:00 p.m. - 6:00 p.m.	Judging & Inspections
7:00 p.m.	Pits Close

Saturday, March 18

7:00 a.m.	Pits Open
8:00 a.m. - 8:30 a.m.	Drivers Meeting
9:00 a.m. - 9:30 a.m.	Opening Ceremony
9:30 a.m. - Lunch	Qualifying Matches
11:30 a.m. - 12:30 p.m.	Lunch Break - Hopper Div.
12:30 p.m. - 1:30 p.m.	Lunch Break - Tesla Div.
Lunch - 5:15 p.m.	Qualifying Matches
5:45 p.m.	Pits Close
7:30 p.m. - 10:00 p.m.	Team Social

Sunday, March 19

7:30 a.m.	Pits Open
8:30 a.m. - 9:45 a.m.	Qualifying Matches
9:45 a.m.	Alliance Selection
10:30 a.m. - 11:30 a.m.	Division Semi-finals
11:30 a.m. - 12:30 p.m.	Lunch Break - Hopper Div.
12:30 p.m. - 1:30 p.m.	Lunch Break - Tesla Div.
1:30 p.m. - 2:30 p.m.	Division Finals
2:30 p.m. - 3:30 p.m.	Championship Event Finals
3:45 p.m. - 4:45 p.m.	Closing Awards Ceremony
6:00 p.m.	Pits Close

Visit *www.ftceast.org* for more information.

MATCH PLAY AND ELIMINATION ROUNDS

During the **Qualifying Matches**, teams are randomly assigned into alliances of two teams. A team's alliance partner in one match may be their opponent in another match.

Team Rank: Teams will be ranked by their total Qualifying Points (QPs). If multiple teams have the same QP total, then they will be ranked by their Ranking Points (RPs). If multiple teams have the same RP total as well, then they will be ranked by their highest match score. If still tied, the next highest match score will be used until the tie is broken.

Qualifying Points: Teams receive 2 points for a win, 1 for a tie, and 0 points for a loss or disqualification (DQ).

Ranking Points: All teams in a match receive the score of the losing alliance before penalties unless they have a DQ (which gives that team 0 RP).

Alliance selection is held after all of the qualifying matches. Four alliance captains are selected based on team rank. These captains then pick one or two additional teams (based on event size) to be their alliance partners for the Elimination Matches.

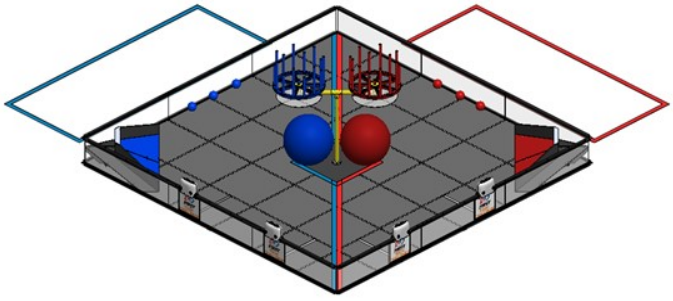
Elimination Matches: Alliances get a win, loss or tie. The advancing alliance is the first one to win two matches.

GAME DESCRIPTION
VELOCITY VORTEX℠
PRESENTED BY QUALCOMM® INCORPORATED

The 2016-2017 Game:
VELOCITY VORTEX℠ presented by Qualcomm is played on a 3.7m × 3.7m (12 ft. × 12 ft.) square field with approximately 0.3m (1 ft.) high walls and a soft foam mat floor. The field is divided diagonally into a "red" and a "blue" side corresponding to the two alliances. In the center of the field are two goals on a rotatable stand called the Center Vortex. Two ramps, each with a goal, called the Corner Vortex, are placed in opposite sides of the field. The Center Vortex Goals and Corner Vortexes are alliance specific. There are also four alliance neutral Beacons, two placed on each front wall next to the Corner Vortex. There are floor markings as well as Vision Targets placed on the field walls as reference points for robot navigation.

Alliance specific scoring elements for VELOCITY VORTEX℠ presented by Qualcomm are five small balls called Particles and one large ball called a Cap Ball per alliance. At the start of a match, each alliance has three Particles available for preloading and scoring during the Autonomous period. Each alliance can earn up to two more Particles for use during the Driver-Controlled period by claiming Beacons during the Autonomous period.

Matches have two distinct periods of play: a 30-second Autonomous period followed by a two-minute Driver-Controlled period, the last 30 seconds of the Driver-Controlled period is called the End Game which adds new scoring opportunities for robots to achieve.



Autonomous Period:
During the Autonomous period, robots operate using only pre-programmed instructions. Alliances earn points by: claiming Beacons, moving the Cap Ball off of the Center Vortex base onto the field floor, scoring Particles into their alliance's Center Vortex or Corner Vortex. Alliances may also gain points by parking their robot in contact with the Center Vortex base or on the Corner Vortex.

Driver-Controlled Period:
During the Driver-Controlled period, alliances earn points by scoring Particles into their alliance's Center Vortex or Corner Vortex. Robots may also claim Beacons for their alliance by triggering them to illuminate their alliance color. There is no limit to the number of times that a Beacon may be triggered. At the end of the Game, the color of the Beacon determines the alliance credited for claiming it.

End Game:
The final 30 seconds of the Driver-Controlled period is called the End Game. In addition to the Driver-Controlled period tasks, alliances earn points by raising the Cap Ball off the playing field floor or by capping their Center Vortex with it.

Autonomous Period Scoring	Points
Robot Parked partially on Center Vortex base	5
Robot Parked fully on Center Vortex base	10
Robot Parked partially on Corner Vortex	5
Robot Parked fully on Corner Vortex	10
Particle scored in Center Vortex	15/Particle
Particle scored in Corner Vortex	5/Particle
Cap Ball in contact with the floor	5
Claimed Beacon *(+1 extra Particle per claimed Beacon, up to 2)*	30/Beacon
Driver-Controlled Period Scoring	**Points**
Particle scored in Center Vortex	5/Particle
Particle scored in Corner Vortex	1/Particle
End Game Scoring	**Points**
Claimed Beacon	10/Beacon
Cap Ball raised off floor but below 76 cm (30 in)	10
Cap Ball raised above 76 cm (30in)	20
Cap Ball scored in Center Vortex Goal	40

PARTICIPATING TEAMS - HOPPER DIVISION

Team #	Team Name	School / Organization	Location
1	Team Unlimited	Sharon Youth Robotics	Sharon, MA
154	Renegade	Renegade Robotics	Harrisville, RI
965	League of Incompetent Gentlemen	GW Community School/Coyote Robotics, Inc.	Springfield, VA
4137	Islandbots	Islandbots Robotics	Setauket, NY
4174	Atomic Theory	The Dalton School	New York, NY
4347	NanoGurus	NanoGurus Robotics	Morris Plains, NJ
4634	FROGbots	Gainesville Community	Gainesville, VA
5398	Robotux	Corporal Kevin James Reinhard USMC Memorial Fund Inc.	Holmdel, NJ
5421	RM'd and Dangerous	Rockville-Montgomery Robotics Association, Inc.	Rockville, MD
5477	Innovo	George Hewlett High School	Hewlett, NY
5485	GorillaBots	Corning Inc.	Corning, NY
5916	BoBots	Bohemia Manor High School home team	Chesapeake City, MD
6037	WAGS	Girl Scouts West Windsor-Plainsboro	Princeton Junction, NJ
6040	Canton Robodogs	Canton High School	Canton, MA
6054	int elligence;	Aurora High School	Aurora, OH
6081	i²r robotics	i²r robotics	Westport, CT
6217	The Fellowship	C-Squared Robotics 4-H Club	Scituate, RI
6347	Geared Up	Geared Up Robotics	Rome, NY
6700	X-BOTS	X-BOTS	Fairfax, VA
7034	Singularity Technology	Wilton Library	Wilton, CT
7117	The Blockheads	Family/Friends	Burke, VA
7182	Mechanical Paradox	Horizons 4-H	Ellicott City, MD
7244	Out of the Box Robotics	Out of the Box Robotics	Downingtown, PA
7350	Watt's NXT?	Say Watt Robotics	Edison, NJ
7486	Suffern's Team Fusion	Suffern High School	Suffern, NY
8393	The Giant Diencephalic BrainSTEM Robotics Team	BrainSTEM Learning	Baden, PA
8644	The Brainstormers	Family/friends	Lexington, MA
8645	Robotic Doges	Laurel Highlands Education and Robotics	Hollsopple, PA
9073	Knightrix	Chantilly High School	Chantilly, VA
9620	The R.O.U.S.'s (Robots of Unusual Size)	Community Team	Concord, NH
9866	VIRUS	Family Friends	Ellicott City, MD
9901	Techie Titans	Nova Labs	Reston, VA
9921	PATRIOTS	Wayne Hills High School	Wayne, NJ
11100	We are Robo	Neighborhood Team	Wakefield, MA
11248	//Cougars	Chatham High School	Chatham, NJ
11453	Uncertainty Principle	The Dalton School	New York, NY

PARTICIPATING TEAMS - TESLA DIVISION

Team #	Team Name	School / Organization	Location
18	The Techno Chix	Girl Scouts Heart of the Hudson	Pleasantville, NY
121	Rhode Rage	Naval Undersea Warfare Center	Middletown, RI
2753	Team Overdrive	Teen Technology	Bridgewater, NJ
2818	G-FORCE	4-H & GEARS	McHenry, MD
3415	Lancers	Livingston High School	Livingston, NJ
3737	Hank's Tanks	Natick High School	Natick, MA
3795	Jag-Wired	Garnet Valley School District	Glen Mills, PA
4017	roboPandas	Sewanhaka Central School District	Floral Park, NY
4029	2 Bits and a Byte	Lexington High School	Lexington, MA
4286	Dragonoids	Greens Farms Academy	Greens Farms, CT
4318	Green Machine Reloaded	Horizons 4-H Club	Ellicott City, MD
4924	Tuxedo Pandas	New River Robotics Association	Christiansburg, VA
5414	TRI Robotics	Southwest Virginia Community College Upward Bound	Cedar Bluff, VA
5484	Enderbots	Corning Incorporated	Corning, NY
7026	JDroids	JDroids Robotics	Wayne, NJ
7039	Lord of the Bricks	Homeschool Resources Group	RIchmond, VA
7423	Flaming Phoenix	Unionville Chadds-Ford School District	Kennett Square, PA
8221	Cubix^3	Community	Hampstead, MD
8297	Geared UP!	Ashburn Robotics	Ashburn, VA
8379	The Parity Bits	Lexington High School	Lexington, MA
8509	STEEL Serpents	STEEL Corp. & Team RobotiX	McMurray, PA
8521	4H Hard-Hitting Hardware Hooligans	Montgomery County, MD 4H	Gaithersburg, MD
9371	General Relativity	The Dalton School	New York, NY
9773	Robocracy	Robocracy 4-H Club	Yorktown Heights, NY
9794	Wizards.exe	Neighborhood	Rockville, MD
9812	T-Noble	Noble Academy Cleveland	Euclid, OH
9910	Greenhorns	Scituate High School	North Scituate, RI
9927	The MidKnight Magic Too!	West Windsor-Plainsboro Regional	Plainsboro, NJ
9971	LANbros	EDGE Robotics Club	Southampton, NJ
9984	JavaScouts	Boy Scouts	New Hartford, NY
10343	Positive Charge	Westfield Robotics Club	Westfield, NJ
10358	Squatch Watch	Ridgeview High School	Clintwood, VA
11115	Gluten Free	Family/Community	Hollis, NH
11174	mc² Robotics	mc² Robotics	Trumbull, CT
11362	M Cubed	Monroe County 4-H	Union, WV
11988	Crusader Robotics	Long Island Lutheran Middle & High School	Brookville, NY

FIRST® TECH CHALLENGE AWARDS

INSPIRE

The highest award that a team can be given.

This judged award is given to the team that truly embodied the "challenge" of the program. The team that receives this award is a strong ambassador for *FIRST*® programs and a role model team. This team is a top contender for many other judged awards and is a gracious competitor. The Inspire Award winner is an inspiration to other teams, acting with *Gracious Professionalism*® both on and off the Playing Field.

ELIMINATION TOURNAMENT AWARDS

The winning alliance and finalist alliance are both recognized for their achievement in robot game performance.

THINK

Removing engineering obstacles through creative thinking.

This judged award is given to the team that best reflects the journey the team took as they experienced the engineering design process during the build season. The Engineering Section of the notebook is the key reference for judges to help identify the most deserving team.

ROCKWELL COLLINS INNOVATE

Bringing great ideas from concept to reality.

This judged award celebrates a team that not only thinks outside the box, but also has the ingenuity and inventiveness to make its designs come to life. This judged award is given to the team that has the most innovative and creative robot design solution to any or all specific field elements or components in the game.

PTC DESIGN

Industrial design at its best.

This judged award recognizes design elements of the robot that are both functional and aesthetic. All successful robots have innovative design aspects; however, the PTC Design Award is presented to teams that incorporate industrial design elements into their solution.

CONNECT

Connecting the dots between community, *FIRST,* and the diversity of the engineering world.

This judged award is given to the team that most connects with their local science, technology, engineering and math (STEM) community.

MOTIVATE

Sparking others to embrace the culture of *FIRST*!

This team embraces the culture of *FIRST* and clearly demonstrates what it means to be a team. This is a team who makes a collective effort to make *FIRST* known throughout their school and community, and sparks others to embrace the culture of *FIRST*.

PROMOTE (Optional Award)

Many decisions, but choosing *FIRST* was easy!

This judged award is given to the team that is most successful in creating a compelling video message designed to change our culture and celebrate STEM.

CONTROL

Mastering robot intelligence.

This judged award celebrates a team that uses sensors and software to enhance the robot's functionality on the field.

COMPASS (Optional Award)

A beacon and leader in the journey of the team.

This judged award recognizes an adult Coach or Mentor who has provided outstanding guidance and support for a Team throughout the year, and demonstrates to the Team what it means to be a Gracious Professional.

FIRST® SCHOLARSHIP AND ALUMNI PROGRAMS

FIRST® participants and Alumni have access to $50 million in *FIRST* Scholarship Opportunities as well as Internship and Networking Opportunities.

The *FIRST* Scholarship Program puts *FIRST*® Tech Challenge and *FIRST*® Robotics Competition participants in direct contact with colleges, universities, corporations, and associations offering thousands of scholarship opportunities exclusively for *FIRST* participants.

How it works:

- *FIRST* Scholarships are offered and administered by the Scholarship Providers.
- *FIRST* Tech Challenge and *FIRST* Robotics Competition participants are eligible to apply as noted.
- Most applications are due between December and April, but be sure to pay close attention to individual submission deadline dates.
- Find opportunities, details, and applications at: www.firstinspires.org/scholarships

The *FIRST* Internship Portal and Alumni Networking Group put *FIRST* Participants and Alumni in contact with *FIRST* Supporter companies and each other!

Find out more about the Internship Portal and the *FIRST* Alumni Networking group at www.firstinspires.org/alumni.

WHAT IS THE FIRST® *DEAN'S LIST AWARD?*

In an effort to recognize the leadership and dedication of *FIRST's* most outstanding *FIRST* Tech Challenge students, the Kamen family sponsors an Award for selected top students known as the *FIRST* Dean's List.

Each *FIRST* Tech Challenge Team is invited to select up to two (2) students who are in the 10th or 11th grade (sophomores or juniors) as *FIRST* Dean's List Semi-Finalists. The students who earn *FIRST* Dean's List Award status as a Semi-Finalists, Finalist or Winner, are great examples of student leaders who have led their Teams and communities to increased awareness for *FIRST* and its mission.

Prestigious colleges have expressed great interest in meeting *FIRST* Dean's List's Award winners and *FIRST* hopes that each Team will take advantage of the opportunity to nominate the most qualified students as *FIRST* Dean's List Nominees!

HONORING EAST COAST TECHNOLOGY PIONEERS

Our two competition divisions are named after these science and technology leaders who lived and worked on the East Coast of the United States and contributed greatly to our society.

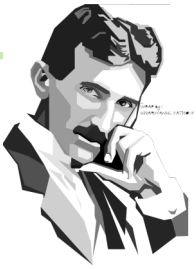
Grace Murray Hopper

(1906 — 1992)

"Amazing Grace" Hopper created modern programming languages and conceptualized and promoted progressive technologies that are used today in computing and communications. She also coined the term "debugging" to fix computer errors. She served in the U.S. Navy for most of her career and retired at the rank of Rear Admiral.

Nikola Tesla

(1856 — 1943)



Nikola Tesla was an electrical and mechanical engineer as well as a prodigious inventor. He developed alternating current (AC), built the first hydroelectric dam with George Westinghouse, invented the induction motor, the rotating magnetic field, the Tesla coil, and the radio remote control for torpedoes among many other achievements.

ABOUT *FIRST*®

"We want to change the culture by celebrating the mind. We need to show kids that it's more fun to design and create a video game than it is to play one."
Dean Kamen, Founder, FIRST®

What is *FIRST*®?

FIRST® (**F**or **I**nspiration and **R**ecognition of **S**cience and **T**echnology) was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, the 501(c)(3) --not-for-profit public charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

FIRST is **More Than Robots**[SM]**.** *FIRST* participation is proven to encourage students to pursue education and careers in STEM-related fields, inspire them to become leaders and innovators, and enhance their 21st century work-life skills.

Gracious Professionalism®
A *FIRST* Credo

Dr. Woodie Flowers, *FIRST* Distinguished Advisor and Pappalardo Professor Emeritus of Mechanical Engineering, Massachusetts Institute of Technology, coined the term *Gracious Professionalism*®.

Gracious Professionalism is part of the ethos of *FIRST*. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.

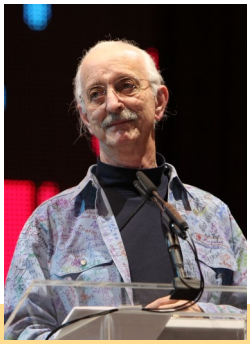
With *Gracious Professionalism*, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended.

In the long run, *Gracious Professionalism* is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.

Coopertition®

Coopertition® produces innovation. At *FIRST*, *Coopertition* is displaying unqualified kindness and respect in the face of fierce competition. *Coopertition* is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete.

Coopertition involves learning from teammates. It is teaching teammates. It is learning from Mentors. And it is managing and being managed. *Coopertition* means competing always, but assisting and enabling others when you can.



FIRST® Distinguished Advisor,
Dr. Woodie Flowers

THANK YOU TOURNAMENT VOLUNTEERS!

East Super-Regional Planning Committee

Tom Zawislak, Dave Hackett, Pennsylvania FIRST Robotics Co-Chairs
Pat Frascella (NJ), Vince Frascella (NJ), Lise Hackett (PA), Lena Kang (DE), Daphne Frownfelter (PA), Rita Wall (PA), Bob Debes (PA); Production Express - Matt Demascolo; University of Scranton - Frani Mancuso

Event Volunteers

Tournament Director
Tom Zawislak

Technical Director
Dave Hackett

Volunteer Coordinator
Vince Frascella

Field Managers
Joe Perrotto
Len Rerek

Emcees
David Price
Tom Wexler

Game Announcers
Danny Blau
Spencer Gray
Pat Killian
Nick Pilaitis

Technical Specialist
Robert Sokolov

Web Manager
Rick Kline

Special Event Assistant
Lena Kang

Student Ambassador Coordinator
Rita Wall

Pit Administrator
Pat Frascella

Pit Administrator Assistant
Nicole Santos

Judge Advisors
Lisa Evans
Priscilla Zawislak

Judge Advisor Assistant
Erin Fadden

Judges
Patty Acree
Inga Aleman
Venkat Bala
Srini Balli
Kiki Chandra
Abha Chauhan
Soumya Chirra
Marshall Coyle
Jay Govindasamy
Raji Krishnan
Rakesh Lalvani
Partha Maddipatla
Derrick Maust
Jyoti Mehta
Bindu Menon
Veera Netla
Art Nilson
Mike Piliaitis
Dave Pochily
Ron Prettyman
JoAnn Rarek
Anil Saxena
Rick Spear
David Wall
Sathya Yalvigi

Judge Match Observers
Eric Cheek
Bob Debes
Allan Krasner
Bill McCann
Joe McCann
Tom Nilson
Robert Russell
Ravi Umapathy

Head Referees
Jeff Lucas (Event)
Noah Dillard
Simon Gray
Jeff Kelbick

Referees
John Bradley
Thomas Brown
Jeevana Chirra
Rob Elkins
Adria Garhart
Michael Gearhart
Miranda Juras
Yan Juras
Dominic Pirocchi
Greg Ryan

Field Technical Advisors
Andrew Burger
Biff Carey
Venkat Chirra
Austin Frownfelter

FTA Assistants
Ethan Garrison
Julie Gauthier
Swami Gurusamy
Unnivelan Poruthikode Raman

Robot Inspection Lead
Jim Carr

Control System Advisors
Kaitlyn Davey
Arnav Prasad
Andrew Szeto

Scorekeepers
George Marchant (Lead)
Loretta Bessette
Lise Hackett
Roslyn Nilson
Yan Yuan

Queueing Leads
Linda Higham
Arun Malhotra

Queueing Assistant
Mike Raneri

Queuers
Adam Frownfelter
Tej Lalvani
Grace Miller
Gina Pilaitis
Lisa Pilaitis
Val Pirocchi
Tyler Thieding

Score Trackers
Alex Pilaitis
Brian Raneri
Kevin Raneri
Ray Kam

Pit Crew Lead
Hena Ashar

Pit Crew
Sandra Maggard

Practice Field Monitor
Keertana Chirra

Team Registrator
Nikki Thieding

Photographers
Daphne Frownfelter
George Marchant

Thank you to all additional volunteers whose names do not appear in the printed program!

A Special Thank You

Volunteer Shirts: Bobby Crusco, Bobbys Graphics
Shirt Design, Event DJ, Entertainment: Tommy Leana
Sponsor Banners: Lackawanna County Visitors Bureau
Lodging and Reservation Planning:
Susan Guthrie-Lowrance, Helms-Briscoe
Robot Inspection Aid: Wren Hensgen
Audio Visual and Facilities: Production Express, Inc.
Special Event Assistant: Lena Kang
Student Ambassador Coordinator: Rita Wall
Media Editor: Daphne Frownfelter

THANK YOU!

Thank you to all who help make this program possible for our youth. FIRST® could not exist without the support of the army of mentors, parents, teachers and volunteers who step up to provide their time and expertise to inspire our young people to get excited about science, technology, engineering and math.

FIRST® Tech Challenge Global Sponsors

FIRST® Tech Challenge
Season Presenting Sponsor

QUALCOMM®

FIRST® Tech Challenge
Official Program Sponsor

Rockwell Collins

FIRST® Tech Challenge
Official IoT, CAD and Collaboration
Software Sponsor

ptc

FIRST® Tech Challenge East Super-Regional Sponsors

get into energy
Get into STEM

Rockwell Collins

verizon

FIRST® FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY