



# **East Super-Regional Championship**

Presented by Andeavor and Rockwell Collins Scranton, PA

March 16-18, <u>2018</u>





### www.ftceast.org

Welcome to the *FIRST*<sup>®</sup> Tech Challenge United States Super-Regional Championship Tournaments Sponsored by Andeavor and Rockwell Collins. 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*<sup>®</sup> congratulates all the teams at this event for outstanding performance this season.



#### **West Super-Regional Championship**

Sponsored by Andeavor and Rockwell Collins March 8-11, 2018 Spokane Convention Center Spokane, WA

#### **South Super-Regional Championship**

Sponsored by Andeavor and Rockwell Collins March 8-11, 2018 Classic Center Athens, GA





#### **North Super-Regional Championship**

Sponsored by Andeavor and Rockwell Collins March 15-17, 2018 Double Tree Hotel & US Cellular Center Cedar Rapids, IA

#### **East Super-Regional Championship**

Sponsored by Andeavor and Rockwell Collins March 16-18, 2018 University of Scranton Scranton, PA



An estimated 5,000+ teams will compete at more than 840 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 2017-2018 season. Top teams from the Super-Regional Championships advance to the *FIRST*<sup>®</sup> Tech Challenge World Championship in Houston, Texas and Detroit, Michigan in April. *FIRST*<sup>®</sup> Tech Challenge Sponsors include *FIRST*<sup>®</sup> Tech Challenge Season Presenting Sponsor Qualcomm Incorporated, *FIRST*<sup>®</sup> Tech Challenge Official Program Sponsor Rockwell Collins, Inc. and *FIRST*<sup>®</sup> Tech Challenge Official 3D Augmented Reality/Virtual Reality Sponsor PTC, Inc.

# FIRST<sup>®</sup> Tech Challenge East Super-Regional Event Supporters



LOCKHEED MARTIN



# WELCOME TO FIRST® TECH CHALLENGE

*FIRST*<sup>®</sup> 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.



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

Pits Close

Pits Open

Pits Close

**Drivers Meeting** 

**Opening Ceremony** 

Hopper Lunch Break

FIRST Ladies Social

FTC Super-Social

**Tesla Lunch Break** 

### Friday, March 16

12:00 p.m. 1:00 p.m. - 6:00 p.m. 7:00 p.m.

### Saturday, March 17

7:00 a.m. 8:00 a.m. - 8:30 a.m. 8:45 a.m. - 9:30 a.m. 10:00 a.m. - 11:30 p.m. 10:00 a.m. - 12:30 p.m. 11:30 a.m. - 12:30 p.m. 12:30 p.m. - 1:30 p.m. 12:30 p.m. - 5:00 p.m. 1:30 p.m. - 5:00 p.m. 2:30 p.m. - 3:30 p.m. 5:30 p.m. 7:30 p.m. - 10:00 p.m.

### Sunday, March 18

7:30 a.m. 8:30 a.m. - 10:00 a.m. 10:00 a.m. - 10:30 a.m. 10:45 a.m. - 11:30 a.m. 11:30 a.m. - 12:30 p.m. 12:30 p.m. - 1:30 p.m. 1:30 p.m. - 2:30 p.m. 2:30 p.m. - 3:30 p.m. 4:00 p.m. - 5:00 p.m. 6:00 p.m.

Pits Open **Qualifying Matches** Alliance Selection **Division Semi-finals** Hopper Lunch Break **Tesla Lunch Break Division Finals Championship Event Finals Closing Awards Ceremony** Pits Close

Visit www.ftceast.org for more information.

# SUPER-REGIONAL 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.

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

Team Rank: Teams will be ranked by their total Qualifying Points (QP's). If multiple teams have the same QP total, then they will be ranked by their Ranking Points (RP's). If multiple teams have the same RP total as well, 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.

Alliance selection is held after all of the qualifying matches. Four alliance captains are selected per division based on team rank. These captains then pick two additional teams 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.

Team Check-in, Pits Open Judging & Inspections Hopper Qualifying Matches **Tesla Qualifying Matches** Hopper Qualifying Matches **Tesla Qualifying Matches** 

### GAME DESCRIPTION FIRST<sup>®</sup> RELIC RECOVERY<sup>™</sup> PRESENTED BY QUALCOMM<sup>®</sup> INCORPORATED

### The 2017-2018 Game:

*FIRST* RELIC RECOVERY<sup>SM</sup> Presented by Qualcomm is played on a 12 ft. × 12 ft. (3.7m × 3.7m) square field with approximately 1 ft. (0.3m) high walls and a soft foam mat floor. The object of the game is to attain a higher score than the opposing alliance by (1) scoring Glyphs into the Cryptoboxes and completing rows, column, and ciphers, (2) transferring Relics to the Recovery Zone, (3) retrieving Jewels, (4) parking on the Balancing Stones, and (5) navigating to specific parts of the Playing Field.

The field is divided in the middle into a "red" and a "blue" side corresponding to the two alliances. In the center of the field is a taped off area that hold the Glyphs. The scoring elements for *FIRST* RELIC RECOVERY<sup>SM</sup> Presented by Qualcomm are 48 alliance-neutral Glyphs (24 gray and 24 brown), 8 alliance-specific Jewels (4 per alliance) and 4 alliance-specific Relics (2 per Alliance). There are 4 alliance-specific Cryptoboxes (2 per Alliance) with taped off safe zones in front of each. There are 4 alliance-specific Balancing Stones (2 per Alliance) on which Robots begin and end the game. There are also 2 off-field alliance-specific Recovery Zones where robots place recovered Relics at the end of the match.

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 Scoring	Points
Alliance-specific Jewel remaining on platform	30
Glyph scored in Cryptobox	15/Glyph
Glyph bonus for Cryptobox Key column	30
Robot Parked in Safe Zone	10
Driver-Controlled Period Scoring	Points
Glyph scored in Cryptobox	2
Completed Row of 3 in Cryptobox	10
Completed Column of 4 in Cryptobox	20
Completed Cipher	30
End Game Scoring	Points
Relic in Recovery Zone #1	10
Relic in Recovery Zone #2	20
Relic in Recovery Zone #3	40
Bonus for keeping Relic Upright	15
Robot balanced on Balancing Stone	20

### Autonomous Period

During the Autonomous period, Robots operate using only pre-programmed instructions. Alliances earn points by: (1) selecting and removing opponent colored Jewels from platforms, (2) scoring Glyphs into the Cryptoboxes, and (3) parking their Robot in a Safe Zone in front of their Cryptobox.

### **Driver-Controlled Period**

During the Driver-Controlled period, alliances earn points by: (1) Scoring Glyphs into their Alliance's Cryptoboxes and (2) Creating Cipher patterns with their Glyphs in the Cryptoboxes.

### End Game

The final 30 seconds of the Driver-Controlled Period is called the End Game. In addition to the previously listed Driver-Controlled Period scoring activities, alliances earn points by (1) moving their Relics to safety in their Recovery Zone and (2) balancing Robots on the Balancing Stones.









# PARTICIPATING TEAMS - HOPPER DIVISION

Team	Team Name	School / Organization	Location
1	Team Unlimited	Sharon Youth Robotics	Sharon, MA
207	Critical Mass	Dwight-Englewood School	Englewood, NJ
2753	Team Overdrive	Teen Technology	Bridgewater, NJ
3032	Hyperion	The Prout School	Wakefield, RI
3981	The Griffins	JCOBANY & Jamaica College	New York, NY
4106	Supposable Thumbs	Heritage Christian School	New Berlin, WI
4347	NanoGurus	NanoGurus Robotics	Morris Plains, NJ
4924	Tuxedo Pandas	New River Robotics Association	Christiansburg, VA
5477	Innovo	Hewlett-Woodmere UFSD	Hewlett, NY
5501	USS Enterprise	Van Wert High School	Van Wert, OH
6040	Canton Robodogs	Canton High School	Canton, MA
6217	The Fellowship	C-squared Robotics 4-H Club	Scituate, RI
6549	Whoa!Bots	Sewickley Academy	Sewickley, PA
7026	JDroids	Community Team	Wayne, NJ
7182	Mechanical Paradox Cubed	Horizons 4-H Club	Catonsville, MD
7350	Watt's NXT?	Say Watt Robotics	Edison, NJ
7468	Blue Chariots of Fire	Epiphany Lutheran Church	Columbia, MD
8297	Geared UP!	Ashburn Robotics	Ashburn, VA
8644	The Brainstormers	Family/Friends	Lexington, MA
8699	League of Extraordinary Robotocists	AKOMA Foundation, Inc	Danbury, CT
9242	GearHounds	York Country Day School	York, PA
9372	Standard Model	The Dalton School	New York, NY
9620	The ROUS's (Robots of Unusual Size)	Community Team	Concord, NH
9794	Wizards.exe	Rockville Robotics Inc.	Rockville, MD
9872	(In)Formal Logic	Covenant Christian Academy	Harrisburg, PA
9927	The MidKnight Nova	West Windsor Plainsboro Regional School District	Plainsboro, NJ
10030	7 Sigma Robotics	Community Team	Cincinnati, OH
10582	Emerald Knights	Livingston High School	Livingston, NJ
11115	Gluten Free	Neighborhood Team	Hollis, NH
11180	Beaks N Bolts	West Caldwell Tech	West Caldwell, NJ
11362	MCubed	Monroebotics 4-H Club	Union, WV
11754	EnergySmart	Thomas Edison EnergySmart Char- ter School	Somerset, NJ
12377	Hopkins Robotics	Hopkins School	New Haven, CT
12538	eBorg Robotics	eBorg Robotics Inc	East Hanover, NJ
12787	fooIS TEAM ahead	Nova Labs Robotics	Reston, VA
12970	RoboSmart	Thomas Edison EnergySmart Char- ter School	Somerset, NJ

# PARTICIPATING TEAMS - TESLA DIVISION

Team	Team Name	School / Organization	Location
154	Renegade	Burrillville High School	Harrisville, RI
310	Stuy Fission	Stuyvesant High School	New York City, NY
2818	G-FORCE	GEARS Inc. 4-H	Mc Henry, MD
3595	Schrödinger's Hat	Community Team	Alexandria, VA
4029	2 Bits and a Byte	Lexington High School	Lexington, MA
4137	IslandBots	Community Team	Setauket, NY
4634	FROGbots	Community Team	Gainesville, VA
5356	Team Tardis	Corning NY Area Community Team	Corning, NY
5484	Enderbots	Corning Incorporated	Corning, NY
6027	L.E.D. Empire	Orange Robot Labs	Newport News, VA
6055	GearTicks	GearTicks	Lincoln, MA
6347	Geared Up	Geared Up Robotics	Clayville, NY
6567	Red Hook RoboRaiders	Red Hook High School	Red Hook, NY
7117	The Blockheads	Friends/Family	Burke, VA
7244	Out of the Box Robotics	Out of the Box Robotics	Downingtown, PA
7423	Flaming Phoenix	Unionville Chadds-Ford SD	Kennett Square, PA
7953	Vertigo	Albemarle High School	Charlottesville, VA
8397	Team Beta	Cornell Cooperative Extension Clin- ton County 4H	Plattsburgh, NY
8645	Robotic Doges	Laurel Highlands Education and Robotics, Inc.	Hollsopple, PA
9073	Knightrix	Chantilly High School	Chantilly, VA
9371	General Relativity	The Dalton School	New York, NY
9421	Hydrofluoric Robotics	Harborfields High School	Greenlawn, NY
9773	Robocracy-4H	4H Westchester County	Chappaqua, NY
9867	Evolution Robotics	Hadley FTC Robotics	Hadley, MA
9921	PATRIOTS	Wayne Hills High School	Wayne, NJ
9971	LANbros	Homeschool	Southampton, NJ
10358	Squatch Watch	Ridgeview High School	Clintwood, VA
11100	We are Robo	Family/Neighborhood	Wakefield, MA
11174	mc <sup>2</sup> Robotics	mc <sup>2</sup> Robotics	Trumbull, CT
11248	//Cougars	Chatham High School	Chatham, NJ
11453	Uncertainty Principle	The Dalton School	New York, NY
12116	Redbots	Parsippany High School	Parsippany, NJ
12414	Metal Benders	John Jay High School	Cross River, NY
12601	Robostorm	4H	Hunterdon County, NJ
12833	Mechanical Meltdown	Neighborhood Team	Watkins Glen, NY
13475	Lionotics 2	Yeshiva University High School For Boys	New York, NY

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

### 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.



### **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.

### 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*.

### CONTROL

#### Mastering robot intelligence.

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

### **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.

### **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.



www.firstinspires.org

200 BEDFORD STREET MANCHESTER, NH 03101

# FIRST<sup>®</sup> SCHOLARSHIP AND ALUMNI PROGRAMS

*FIRST*<sup>®</sup> 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*<sup>®</sup> Tech Challenge and *FIRST*<sup>®</sup> 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: <u>www.firstinspires.org/scholarships</u>

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<sup>®</sup> 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 10<sup>th</sup> or 11<sup>th</sup> 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<sup>®</sup>



"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<sup>®</sup>

### What is *FIRST*<sup>®</sup>?

FIRST<sup>®</sup> (For Inspiration and Recognition of Science and Technology) was founded in 1989 to inspire young people's interest and participation in science and technology. Based in Manchester, NH, the 501 --not-for-profit public (c)(3)charity designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, math. while buildina self-confidence, and knowledge, and life skills.

*FIRST* is **More Than Robots<sup>SM</sup>**. *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 21<sup>st</sup> century work-life skills.





### Gracious Professionalism<sup>®</sup> 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*<sup>®</sup>.

*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**<sup>®</sup>

produces innovation. At FIRST, Coopertition<sup>®</sup> 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. managing and being managed. And it is Coopertition means competing alwavs. but assisting and enabling others when you can.



FIRST<sup>®</sup> 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 Dillard (DE), Daphne Frownfelter (PA), Rita Wall (PA), Production Express - Matt Demascolo; University of Scranton - Frani Mancuso

### **Event Volunteers**

Tournament Director Tom Zawislak

Technical Director Dave Hackett

**Volunteer Coordinators** Bob Debes Vince Frascella

Field Managers Joe Perrotto Len Rerek

Emcees Colton Mehlhoff Tom Wexler

#### **Game Announcers** Danny Blau Spencer Gray Pat Killian Nick Pilaitis

Technical Specialist Robert Sokolov

Web Technology Manager Rick Kline

Media Editor Daphne Frownfelter

Student Ambassador Coordinator Rita Wall

Pit Administrator Pat Frascella

**Pit Crew** Hena Ashar (Lead) Aliza Reshamwalla Amber Reshamwalla

#### Event Support Staff Bob Debes Lena Dillard Joe Tate

### A Special Thank You

AV and Production: Production Express, Inc. Lodging and Reservation Planning: Susan Guthrie-Lowrance, Helms-Briscoe

**Judge Advisors** JoAnn Rerek Priscilla Zawislak

**Judge Advisor Assistants** Emilia Budzikowska Athena Damdounis

#### Judges

Ruei-Jen Abraham-Fan **Rich Bender** Abha Chauhan Soumya Chirra Marshall Coyle **Bill Gardner** Jay Govindasamy Swami Gurusamy Randy Gutentag Francine Heitmuller Brianna Kitchener Steve Kitchener Chris Kunkel Jyoti Mehta Bindu Menon Veera Netla Art Nilson Mike Pilaitis Dave Pochily Karthik Ramagopal Gavin Samuels Anil Saxena **Chuck Wagner** Michelle Walker Sasha Wall

Judge Match Observers Eric Cheek Scott Coyle Robert Russell Nicole Wall

#### Head Referees

Jeff Lucas (Event) Noah Dillard Simon Gray Jeff Kelbick

#### Referees Thomas Brown Jim Carr Rob Elkins Adria Garhart Miranda Juras Yan Juras Dominic Pirocchi Tobias Richfield George Riehm

#### **Field Technical Advisors**

Andrew Burger Venkat Chirra Austin Frownfelter Arnav Prasad

### **FTA Assistants**

Kaitlyn Davey Aditya Dharap Julie Gauthier Timon Littleford Kevin Raneri Mike Raneri

### **Control System Advisors**

Ethan Garrison Sanjna Ravichandar Tyler Thieding Kyle West

### Scorekeepers

George Marchant (Lead) Loretta Bessette Lise Hackett Gerry Martin Roslyn Nilson

### **Queueing Leads**

Holly Jacobs Arun Malhotra Richard Maroney Lisa Pilaitis

### **Queueing Assistants**

Nitya Agrawal AJ Keenan

#### Queuers

Adam Frownfelter Alex Gardner Cody Mattson Shreya Menon Alex Pilaitis Val Pirocchi Brian Raneri Michael Tashjian

### **Score Trackers**

Alexander Gruber Karen Jacobs Gwynnie LaMarche Ilan Messing Ashok Munisamy Rajendra Sadhu Jaspreet Seth Sridhar Tatineni Victor Terpstra

### Field Reset

Jay Gardner Chris Landolfi Andrew Matievski Colin Pierce Elanagh Smith Carson Storm

### FIRST Ladies Staff

Dusty Crocco

### Photographers

Nemi Agrawal Alex Bayer Daphne Frownfelter George Marchant

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

Sponsor Banners: Lackawanna County Visitors Bureau Shirt Design, Event DJ, Entertainment: Tommy Leana Volunteer Shirts: Bobby Crusco, Bobbys Graphics

# **THANK YOU!**

Thank you to all who help make this program possible for our youth. FIRST<sup>®</sup> 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<sup>®</sup> Tech Challenge Global Sponsors

FIRST<sup>®</sup> Tech Challenge **Season Presenting Sponsor** 



FIRST<sup>®</sup> Tech Challenge **Official Program Sponsor** 



FIRST<sup>®</sup> Tech Challenge **Official 3D Augmented Reality/ Virtual Reality Sponsor** 



