Riverside High School of Engineering & Design
Yonkers, New York
January 23, 2016

2015-2016 Lower Hudson Valley Qualifying Tournament

Riverside High School of Engineering & Design
Yonkers, New York
January 23, 2016

For Inspiration & Recognition of Science & Technology
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

FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY
TOURNAMENT SCHEDULE

7:30 ......................... Team Check-in, Pits Open
8:00 - 10:00 ............ Inspections, Judge Interviews, Practice
10:10 ......................... Drivers’ Meeting
10:30 ........................ Opening Ceremony
10:45 - 12:30 ........ Qualification Matches
12:30 - 1:10 .............. Lunch Break
1:10 - 3:00 ........ Qualification Matches continue
3:10 ........................ Alliance Selection
3:30 - 5:00 ........ Elimination and Final Rounds
5:10 ........................ Closing Ceremony
6:00 ........................ Pits Close

Times are approximate and subject to change.

FIRST RES-Q℠ GAME DESCRIPTION

FIRST® RES-Q℠ is played on a 12 ft. x 12 ft. square field with approximately 1 ft. high walls and a soft foam mat floor. Mountains consisting of alliance-specific climbing areas and goals are located in two corners of the playing field. Alliance -designated Zip Lines extend from the top of the Mountains to the playing field wall. Two alliance-specific Rescue Beacons in need of “repair” by autonomous robots are located on the playing field perimeter wall.

Scoring elements are 14 Climber figurines and 80 Debris in the shape of blocks and spheres. At the start of a match, Debris are randomly located throughout the playing field floor. Each team starts with up to two Climbers that can be pre-loaded onto their robot.

Two randomly selected teams are paired together as an alliance to play one match against a second alliance. Alliances are designated as either “red,” or “blue.”

Matches have two distinct periods of play: a 30-second Autonomous period followed by a two minute Driver-Controlled period which includes a 30 second End Game.

Autonomous Period:

The game starts with a 30-second Autonomous period where robots are operated via pre-programmed instructions only. Robots gain points by: "resetting" Rescue Beacons, delivering Climbers to a Shelter, parking on the Mountain, and parking in the Rescue Beacon Repair Zone or Floor Goal.

Driver-Controlled Period:

During the Driver-Controlled period, teams retrieve up to five Debris at a time from the playing field and place them in Mountain Goals or Floor Goals. Debris may not be de-scored from the Mountain Goals but may be de-scored from the Floor Goals. Robots also scale the Mountains to release Climbers that slide down a Zip Line to safety.

End Game:

The final 30-seconds of the Driver-Controlled period is called the End Game. In addition to the Driver-Controlled period tasks, robots earn bonus points in the End Game by hanging from the Pull-up Bar on the topmost vertical section of the Mountain and claiming an All Clear Signal for their alliance.

Autonomous Period Scoring

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Robot Parked in a Rescue Beacon Repair Zone</td>
</tr>
<tr>
<td>5</td>
<td>Robot Parked in a Floor Goal</td>
</tr>
<tr>
<td>5</td>
<td>Robot on the Mountain and Touching the Floor</td>
</tr>
<tr>
<td>10</td>
<td>Robot Parked on the Mountain Low Zone</td>
</tr>
<tr>
<td>20</td>
<td>Robot Parked on the Mountain Mid Zone</td>
</tr>
<tr>
<td>40</td>
<td>Robot Parked on the Mountain High Zone</td>
</tr>
<tr>
<td>20 ea.</td>
<td>Rescue Beacon Illuminated for an Alliance</td>
</tr>
<tr>
<td>10 ea.</td>
<td>Climber in a Shelter</td>
</tr>
</tbody>
</table>

Driver-Controlled Period Scoring

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ea.</td>
<td>Debris Scored in a Floor Goal</td>
</tr>
<tr>
<td>5 ea.</td>
<td>Debris Scored in a Mountain Low Zone</td>
</tr>
<tr>
<td>10 ea.</td>
<td>Debris Scored in a Mountain Mid Zone</td>
</tr>
<tr>
<td>15 ea.</td>
<td>Debris Scored in a Mountain High Zone</td>
</tr>
<tr>
<td>5</td>
<td>Robot on the Mountain and Touching the Floor</td>
</tr>
<tr>
<td>10</td>
<td>Robot Parked on the Mountain Low Zone</td>
</tr>
<tr>
<td>20</td>
<td>Robot Parked on the Mountain Mid Zone</td>
</tr>
<tr>
<td>40</td>
<td>Robot Parked on the Mountain High Zone</td>
</tr>
<tr>
<td>20 ea.</td>
<td>Climber Released/Slid Down the Zip Line</td>
</tr>
<tr>
<td>10 ea.</td>
<td>Climber in a Shelter</td>
</tr>
</tbody>
</table>

End Game Scoring

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>Robot Completely Supported by the Pull-up Bar</td>
</tr>
<tr>
<td>20 ea.</td>
<td>Claim an All Clear Signal</td>
</tr>
</tbody>
</table>
# PARTICIPATING TEAMS

<table>
<thead>
<tr>
<th>Team</th>
<th>Team Name</th>
<th>School / Organization</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>PolyGnomes</td>
<td>Green Meadow Waldorf School</td>
<td>Chestnut Ridge</td>
<td>NY</td>
</tr>
<tr>
<td>4243</td>
<td>Iron Devils</td>
<td>Peekskill High School</td>
<td>Peekskill</td>
<td>NY</td>
</tr>
<tr>
<td>4244</td>
<td>Big Bertha</td>
<td>The Tech Center at P/NW BOCES</td>
<td>Yorktown Heights</td>
<td>NY</td>
</tr>
<tr>
<td>4326</td>
<td>Basement Lions 1</td>
<td>Horace Mann School</td>
<td>Bronx</td>
<td>NY</td>
</tr>
<tr>
<td>4481</td>
<td>Woodlands Warriors</td>
<td>Woodlands Senior High School</td>
<td>Hartsdale</td>
<td>NY</td>
</tr>
<tr>
<td>4654</td>
<td>Jellyfish</td>
<td>Blind Brook High School</td>
<td>Rye Brook</td>
<td>NY</td>
</tr>
<tr>
<td>4809</td>
<td>Botman</td>
<td>The Albany Academies</td>
<td>Albany</td>
<td>NY</td>
</tr>
<tr>
<td>5050</td>
<td>Pelham Robotics Team</td>
<td>Pelham Memorial High School</td>
<td>Pelham</td>
<td>NY</td>
</tr>
<tr>
<td>5484</td>
<td>Enderbots</td>
<td>Family Friends/Corning Incorporated</td>
<td>Corning</td>
<td>NY</td>
</tr>
<tr>
<td>5602</td>
<td>Bionic Gaels</td>
<td>John F Kennedy Catholic High School</td>
<td>Somers</td>
<td>NY</td>
</tr>
<tr>
<td>5637</td>
<td>Tech-Wise Guys</td>
<td>North Salem Middle/High School</td>
<td>North Salem</td>
<td>NY</td>
</tr>
<tr>
<td>6719</td>
<td>Piotech</td>
<td>Pioneer Academy</td>
<td>Wayne</td>
<td>NJ</td>
</tr>
<tr>
<td>7486</td>
<td>Team Erebor</td>
<td>Suffern Senior High School</td>
<td>Suffern</td>
<td>NY</td>
</tr>
<tr>
<td>7488</td>
<td>Technosaurs</td>
<td>Suffern Senior High School</td>
<td>Suffern</td>
<td>NY</td>
</tr>
<tr>
<td>8490</td>
<td>Mamaroneck Tigers</td>
<td>Mamaroneck High School</td>
<td>Mamaroneck</td>
<td>NY</td>
</tr>
<tr>
<td>9024</td>
<td>Juggerknights</td>
<td>The Montfort Academy</td>
<td>Mount Vernon</td>
<td>NY</td>
</tr>
<tr>
<td>9094</td>
<td>HELLO KITTY</td>
<td>Riverside High School</td>
<td>Yonkers</td>
<td>NY</td>
</tr>
<tr>
<td>9541</td>
<td>Xeno Gaels</td>
<td>John F Kennedy Catholic High School</td>
<td>Somers</td>
<td>NY</td>
</tr>
<tr>
<td>9605</td>
<td>Newburgh Free Acad - N C</td>
<td>Excelsior Academy</td>
<td>Newburgh</td>
<td>NY</td>
</tr>
<tr>
<td>9773</td>
<td>Robocracy</td>
<td>Neighborhood Group</td>
<td>Yorktown Heights</td>
<td>NY</td>
</tr>
<tr>
<td>9832</td>
<td>Robomaniacs</td>
<td>Neighborhood Group</td>
<td>Pleasantville</td>
<td>NY</td>
</tr>
<tr>
<td>10801</td>
<td>EF Academy</td>
<td>EF Academy</td>
<td>Thornwood</td>
<td>NY</td>
</tr>
<tr>
<td>10855</td>
<td>Juggernerds</td>
<td>The Montfort Academy</td>
<td>Mount Vernon</td>
<td>NY</td>
</tr>
<tr>
<td>10870</td>
<td>Ardsley Robotics</td>
<td>Ardsley High School</td>
<td>Ardsley</td>
<td>NY</td>
</tr>
</tbody>
</table>

## 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.
FIRST® SCHOLARSHIPS

A big advantage to participating in FIRST® is gaining access to over $25 million in college scholarships made available by nearly 200 colleges, universities, and corporations who support FIRST. This is an exclusive pool of financial help open only to FIRST team members, giving them a competitive leg up on other students seeking educational funds.

- Most are for use at the specific Provider college or university, but some can be used at any school
- About 40% of FIRST Scholarships can be used for any course of study, not just engineering
- Amounts vary from one-time awards to full four-year tuition

Learn more today: firstinspires.org/scholarships

ALUMNI

The FIRST Scholarship Program is just one of the opportunities that are available to former FIRST Participants as part of the FIRST Alumni Programs. Check out the website to learn more about Internships and Networking opportunities that are available now: firstinspires.org/alumni

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.

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
More than Robots®
This judged award celebrates the team that exemplifies the essence of team building, team spirit and exhibited enthusiasm.

CONNECT
Connecting the dots between community, FIRST, and the business world.
This judged award is given to the team that most connects with their local science, technology, engineering and math (STEM) community.

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.

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 team’s journey.
This judged award recognizes an adult Coach or Mentor who has provided outstanding guidance and support for a team.

ELIMINATION TOURNAMENT AWARDS

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

FIRST® (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(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.® 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.

FIRST VALUES

Gracious Professionalism®
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.
# Thank You Tournament Volunteers!

## Tournament Director
James Amadio  
*Riverside High School*

## Hudson Valley NY FTC
Dr. Rick Kline  
*Pace University*

## Judge Advisor
John Checco  
*Checco Services*

## Emcee
Vinny Fata

## Judges
- Scott Elam  
- Linda Higham  
- Laughton Huggins  
- Nasser Ibrahim  
- Marc Kutscher  
- Ryan McIntyre  
- Virginia Mishkin

## Game Announcers
- Andrew Duke  
- Bernadette Heid

## Head Referee
Neil Stewart

## Referees
- John Diehl  
- Mirsha Hernandez  
- Erik Nava  
- Kristine Stewart

## Judge Match Observers
Mahmoud Abugharbieh

## Judge Assistant
Kelly Jakab

## Scorekeeping
- David Jarcho  
- Andrew Simko

## Administration, Check-In
- Jennifer Beisswenger  
- George Yam

## Field Technical Advisors
- John McDonnell  
- Steve Grosmark  
- Artgig Studios

## Field Manager
Danny Fanek

## Lead Robot Inspector
John Stewart

## Lead Queuer
Ahmad Simreen

## Food Service
- Albert Acevedo  
- Esmeralda Colon  
- Gabriela Flores  

## A/V
Emilio Salamanca

## DJ
Vinny Fata  
Jake Guaitarilla

## Queueing, Field Assistants
- Britney Flores  
- Nia Jeter  
- Natalie Navedo  
- Alize Rivera  
- Laila Tariq

## Volunteers
- Paul Duggins  
- Daquan Green-Smith  
- Joseph Marji  
- Ken Noonan

Thank you to all other volunteers whose names did not make it into the printed program!
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 Official Program Sponsor

Rockwell Collins

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

FIRST® Tech Challenge Official Control System Sponsor

QUALCOMM®

Hudson Valley Regional Sponsors

Seidenberg School of Computer Science and Information Systems

PACE University Work toward greatness.

Lower Hudson Valley Local Sponsors

Yonkers Public Schools Riverside

Bella Vista Deli
2150 Central Ave, Yonkers 914-337-6060

Pizza Hut
137 Lake Ave, Yonkers 914-476-5023

FOR INSPIRATION & RECOGNITION OF SCIENCE & TECHNOLOGY