



Team Handbook

FRC Team 225 TechFire Robotics

2018



"Building a Brighter Future, One Student at a Time"

Table of Contents

[Introduction](#)

[Section 1: Introduction to Robotics](#)

[What is FIRST?](#)

[Section 2: About TechFire](#)

[Our Mission](#)

[History](#)

[Accomplishments](#)

[Goals](#)

[Competition Goals 2018](#)

[Long Term Goals](#)

[Challenges](#)

[Important Dates for the 2018 Season](#)

[Section 3: Team Structure and Procedures](#)

[Team Structure](#)

[Overview of Team Activity](#)

[Procedures](#)

[Robot Design Process](#)

[Leadership Positions](#)

[Subteam Leads](#)

[Team Captains](#)

[Competition Positions](#)

[Competition Drive Team](#)

[Communication](#)

[Section 4: Students](#)

[Application Process](#)

[Attendance](#)

[Academic Standing](#)

[Acceptable Behavior](#)

[Competitions](#)

[At the Shop and Practice Field](#)

[Inappropriate Behaviors](#)

[PDA](#)

[Disciplinary Action](#)

[Section 5: Mentors and Volunteers](#)

[Mentor Descriptions and Selection Process](#)

[Lead Mentor](#)

[Associate Mentor](#)

[College Mentor](#)

[Volunteer](#)



- [2018 Mentor Roster](#)
- [Parental Involvement](#)
- [Section 6: Budget and Finance](#)
 - [2016 Budget](#)
 - [Student Financial Obligations](#)
 - [Fundraising](#)
 - [Sponsorship](#)
 - [TechFire Robotics of York \(TROY\)](#)
- [Section 7: Safety](#)
 - [In the Shop](#)
 - [At Competitions](#)
 - [At Outreach and Demos](#)
- [Section 8: Travel](#)
 - [Local Travel](#)
 - [Team Travel](#)
- [Section 9: College and Career Opportunities](#)
 - [Scholarships](#)
 - [Career Opportunities](#)
 - [Resume and College Essay Help](#)
 - [Letters of Recommendation](#)
 - [Dean's List Award](#)
 - [Dean's List Selection Process](#)

Introduction

This handbook provides an overview of the program and responsibilities of team members, including information relating to team history, membership requirements, team structure, parent participation, team rules and guidelines, competition events, travel and other central aspects of the team. Note: This handbook is a fluid document. The structure and guidelines may be updated as needed.

Just as all of a robot's parts work toward a common functional goal, members of our team have shared goals as well. Information in the handbook will enable our team to work as a unit. FIRST, "For Inspiration and Research in Science and Technology," provides opportunities for building robots, sharing information with other teams around the world, competing at a high but cooperative level, and inspiring others to enjoy science and technology

Section 1: Introduction to Robotics

What is FIRST?

The FIRST (For Inspiration and Recognition of Science and Technology) is an international robotics competition, founded by inventor Dean Kamen in 1992. The mission of FIRST is "to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self confidence, communication, and leadership."

FIRST has grown into four divisions: Junior FIRST Lego League (grades K-3), FIRST Lego League (grades 4-8), FIRST Tech Challenge (grades 7-12), and the FIRST Robotics Competition (grades 9-12).



Section 2: About TechFire

Our Mission

TechFire is a FIRST Robotics Competition (FRC) team. Our mission is to advance Science, Technology, Education, Art, and Mathematics (STEAM) education throughout South Central Pennsylvania. We are focused on developing student talent through strategic decision making, collaboration, robot design, construction, programming, community outreach, business, media, and marketing. We seek to encourage creativity, innovation, perseverance, and cooperation while promoting student involvement in all aspects of team development. Using a student led and mentor directed approach we:

- Design, prototype, build, and program a robot to compete in the FIRST Robotics Competition (FRC).
- Develop student leadership and skill sets which drive the team to high performance levels.
- Provide volunteer services in the local community.
- Support STEAM education at all levels.
- Foster a creative, accepting environment and support student diversity.
- Support student higher education pursuits.
- Encourage students to pursue excellence in everything they do.

“The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.” ~Vince Lombardi

History

1999-2006: Founded at William Penn High School, located in the heart of inner-city York. Despite successful seasons, the school could no longer support the team

2009: Became operational again.

2009-2012: Worked with limited resources and began to recruit new members but was once again at a loss for space when the Advanced Skill Center could no longer support the program.

2012: New home at a space donated by Coupling Corporation of America. Experienced and enthusiastic mentors joined the team along with many young and talented students from various school districts in the area.

2013: The team was able to build a very successful robot on a limited budget. The team places in the top 1.5% of teams worldwide for the first time. The team also won its first event ever and went to the World Championship for the first time in 10 years.

2014: TechFire grows to 31 members from 9 local high schools. Mentor participation dramatically increased. The team had the support of 12 mentors from various engineering, academic, medical, and business professions. The team was again very successful and attended the World Championship.

2015: TechFire wins the Mid-Atlantic Robotics District Championship and comes within one match of reaching the Einstein field at the FIRST Robotics World Championship. TechFire was the top-ranked team in MAR for the first time.

2016: TechFire wins the Mid-Atlantic Robotics District Championship again and

Accomplishments

For the past 3 years, TechFire has ranked in the top 1.5% of teams worldwide. Here are details of the team's specific accomplishments:

2013 Season (Game: Ultimate Ascent):

- Springside-Chestnut Hill District Event Champion
- Springside-Chestnut Hill Creativity Award Winner
- Lenape District Event Semifinalist
- Innovation in Control Award Winner
- Mid-Atlantic Robotics Region Championship Semifinalist
- Mid-Atlantic Robotics Region Championship Creativity Award Winner
- FIRST World Championships Division Quarterfinalist
- MidKnight Mayhem OffSeason Event Champions
- Battle O'Baltimore OffSeason Competition Champion and #1 Seed
- Duel on the Delaware OffSeason Competition Finalist
- Ramp Riot OffSeason Competition Champion and #1 Seed

2014 Season (Game: Aerial Assist):

- Springside-Chestnut Hill District Event Champion
- Springside-Chestnut Hill Entrepreneurship Award Winner
- Lenape District Event Quarterfinalist
- Lenape Entrepreneurship Award Winner
- Greater DC Regional Champion and #1 Seed

- Greater DC Regional Xerox Creativity Award
- Mid-Atlantic Robotics Region Championship Semifinalist
- Mid-Atlantic Robotics Region Championship Motorola Quality Award
- FIRST World Championships Division Quarterfinalist
- MidKnight Mayhem OffSeason Event Champions
- Indiana Robotics Invitational
- Battle O’Baltimore OffSeason Competition Quarterfinalist and #1 Seed
- Duel on the Delaware OffSeason Competition Semifinalist
- Ramp Riot OffSeason Competition Semifinalist and #1 Seed

2015 Season (Game: Recycle Rush):

- Springside-Chestnut Hill District Event Champion and #1 Seed
- Springside-Chestnut Hill Engineering Excellence Award Winner
- Upper Darby District Event Champion and #1 Seed
- Upper Darby Engineering Excellence Award Winner
- Mid-Atlantic Robotics Region Championship Champion
- Mid-Atlantic Robotics Region Championship Motorola Quality Award
- FIRST World Championships Division Finalist
- MidKnight Mayhem OffSeason Event Finalist
- Indiana Robotics Invitational
- Battle O’Baltimore OffSeason Competition Champion and #1 Seed
- Duel on the Delaware OffSeason Competition Champion
- Ramp Riot OffSeason Competition (upcoming)

2016 Season (Game: Stronghold):

- Springside-Chestnut Hill District Event Champion and #1 Seed
- Springside-Chestnut Hill
- Westtown District Event Champion
- Westtown District Award
- Mid-Atlantic Robotics Region Championship Champion
- Mid-Atlantic Robotics Region Championship Award
- FIRST World Championships Division Finalist
- MidKnight Mayhem OffSeason Event Finalist
- Indiana Robotics Invitational Finalists
- Battle O’Baltimore OffSeason Competition Champion and #1 Seed
- Duel on the Delaware OffSeason Competition
- Ramp Riot OffSeason Competition Champions
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Goals

Competition Goals 2017

- Increased use of project management techniques to improve on collective team productivity throughout the build and competition season
- Focus on strategic design to build a robot that has an optimal point potential.
- Build a successful, technically challenging, competitive robot through a combination of both student and mentor contributions that can compete at the Regional and World Championship level.
- Increase manufacturing and design capabilities through use of new technologies, machinery, and equipment.
- Win the World Championship

Long Term Goals

Over the next three years:

- Continue to be a world-recognized FIRST robotics team, including recognition on Chief Delphi, at season and postseason events, and throughout the local and FIRST community.
- Be the “go to” organization for getting students involved in robotics in South Central Pennsylvania.
- Expand partnerships with York area organizations and corporations to secure mentors and funding from our local region.
- Focus on recruiting within York City schools, to include helping startup of lower level teams to build skills and recognition of robotics as a student activity, supporting summer camps and demos
- Be a recognized asset in the York Area regional economic development revitalization efforts
- Grow future and foster current FLL and FTC teams to sustain the growth of FIRST-experienced students who aspire to join TechFire

Our team strives to become a driving force for positive community enrichment. Our students' success as future leaders will be a significant contribution to a viable, high-tech workforce. Our team will be an active partner in the York revitalization and rebranding effort and will strive to make the York area an economically strong and innovative place to live and work.

TechFire plans to:

- Educate students in STEAM via partnerships with mentors who have expertise in various related fields.
 - Develop and sustain student internship programs.
 - Support students in their college applications and career search
- Become an integral and celebrated part of the York area educational system through continuous active outreach about the overall purpose of FIRST
- Foster the development of other FIRST teams in the York area.
 - Mentor FLL and FTC teams
 - Support summer camps including robotics
- Continue to find new ways of spreading the FIRST message in our communities.
 - Increase the amount of team media produced
 - Provide continuous updates about the team to local media and foster relationships with local media
 - Designate specific communications with sponsors to keep them updated throughout the season, showing the value of their support
 - Publish 6-month newsletter
- Maintain a 100% high school graduation rate and 100% post secondary training program admission rate in our students.
 - Promote smart study habits and offer tutoring at the shop.
 - Develop metrics for tracking student progress and impact of FIRST participation (e.g. alumni questionnaire, matriculation etc).
- Promote student recognition and awards through FIRST related scholarships and opportunities.
 - Continue to post relevant scholarships and deadlines.
 - Increase mentor assistance with applications.
- Encourage students to embrace the tenets of Gracious Professionalism™

Gracious Professionalism™ and Coopertition™ are two FIRST® values that help create the mindset that students participating in any of the competitions are expected to have. Gracious Professionalism™ stresses that no matter how fierce the competition gets, team members treat each other, as well as members of other teams, with kindness and respect. 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. Examples of Gracious Professionalism™ include but are not limited to:

- Helping other teams repair robots at competitions
 - Never badmouthing another team
 - Competing fiercely while treating others with respect and kindness in the process.
- Strive for diversity in recruitment of both students and mentors.
 - Continue developing and supporting efforts to reach York City (e.g. Martin Library workshops).

Challenges

TechFire faces many challenges related to serving a large geographic region with students from various school districts. We also face challenges secondary to the nature of the FIRST program and the partnerships involved. These challenge include:

- Maintaining student interest in FIRST while also supporting interest in other school and community programs.
- Supporting corporate sponsors and providing value for their investment.
- Sustaining our team while also growing the robotics activities across a large area.
- Sustaining a strong mentor base of active, talented volunteers.
- Maintaining our team facilities to support our success and guarantee long-term fruitful relationships with our sponsors.
- Providing a positive, and valuable and learning experience for students each year.

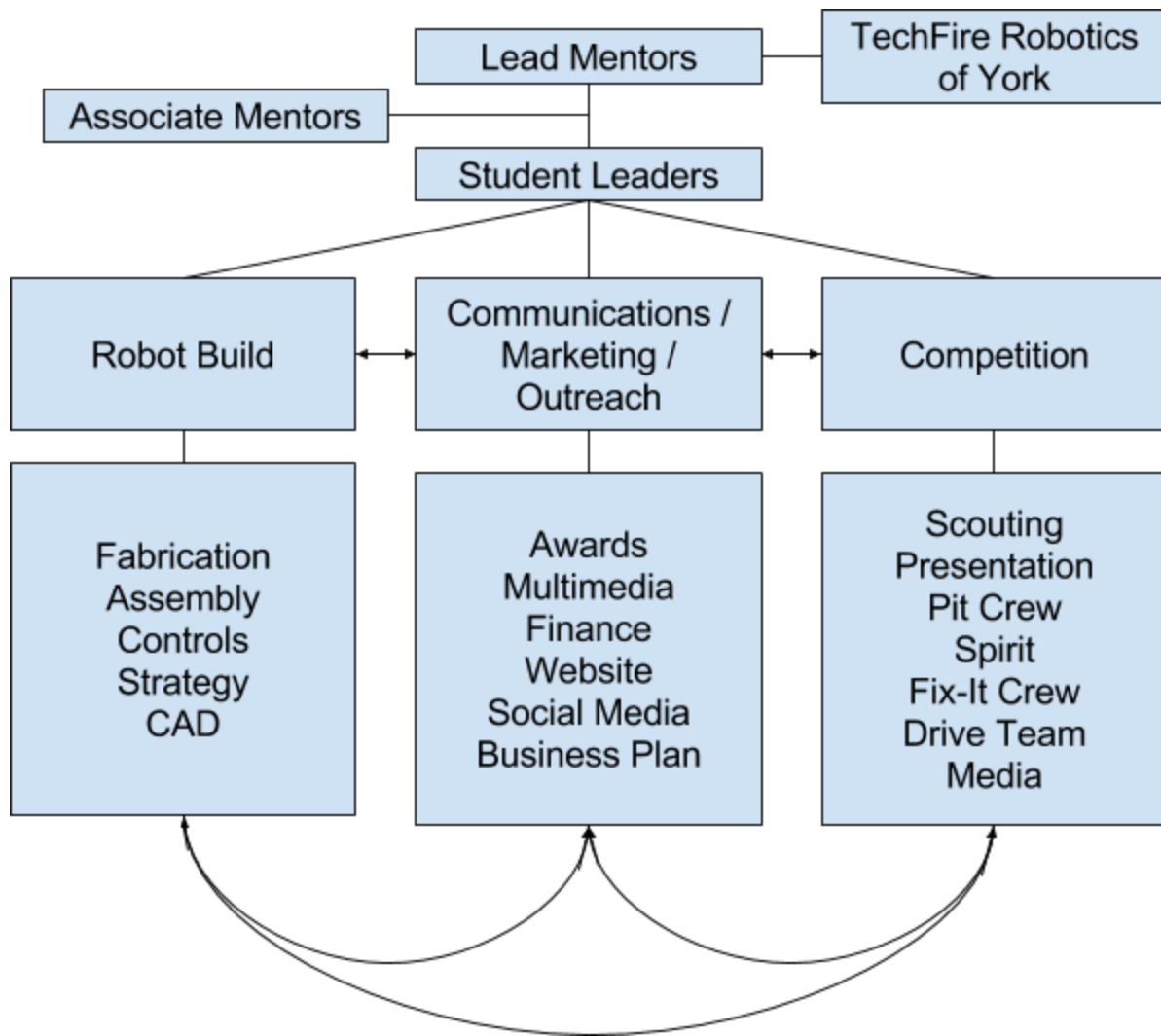
Important Dates for the 2016-2017 Season

January 6	FRC 2018 Kick-off
February 20	Stop Build Day
Mar 17-18	District Event @ Springside-Chestnut Hill Academy
Mar 23-24	District Event @ Montgomery
Apr 5-7	Mid-Atlantic Region Championship @ Lehigh University
Apr 25-28	FIRST World Championship, St. Louis, MO

Section 3: Team Structure and Procedures

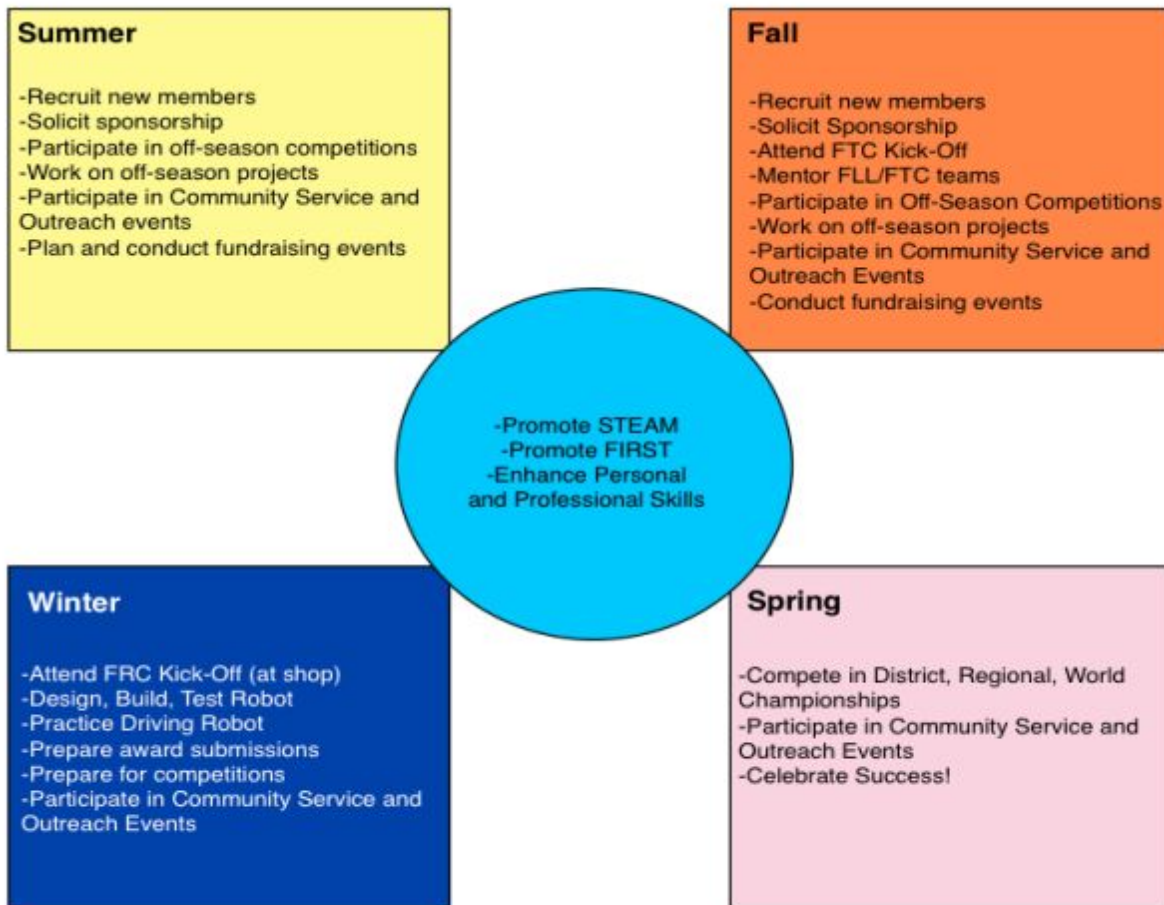
Team Structure

Student members participate in areas that interest them. TechFire does not operate with a “siloed” structure--most students participate in more than one area, and most students participate in a different area at competitions than they do during build season. For those with the desire and aptitude, there are positions open for individual students to demonstrate and enhance leadership skills. Students who wish to be considered for these positions are typically veteran members with at least a year’s experience on the team. However, skilled and dedicated newer members may also be considered for leadership positions at the discretion of the lead mentors.



Overview of Team Activity

While time commitments are most intense during the build and competition season between January and April each year, membership in TechFire is a year round commitment. By keeping students engaged throughout the year, there is opportunity for advancing skills, solidifying team dynamics, participation in community events, and time for conducting outreach activities



TechFire Year-Round Activity Overview

Procedures

Robot Design Process

Each year, TechFire designs and builds a robot over the course of six weeks. When producing the robot, TechFire steps through every stage of the engineering design process.

To begin, the team decides exactly how to play the game. This decision is made using weighted objectives tables and statistics from prior games. Every game-related decision is logic-based, and at no time is any game decision left to a vote. Some prototyping may be required to make these decisions as well.

Immediately following the game decision, a high-level strategic design analysis is performed. This is the design analysis that focuses on just high level subsystems, not detailed designs. This design process is performed in a similar fashion to the game analysis, with a focus on making sure the team chooses a design that is within its means. Some prototyping is performed to help supplement the high-level design analysis.

Once the high-level design is chosen, more prototyping is performed and detailed design work begins. The prototyping supports the detailed design work. Some design work is performed on sketch paper or whiteboards, and some design work is done in Computer Aided Design software.

Concurrently with the design, robot fabrication begins. Some robot components are purchased, some are outsourced to team sponsors, and some are created in-house. Design, fabrication, and assembly happen concurrently to keep all sectors of the team involved in the robot creation process at all times.

As the robot is assembled, a control system is developed concurrently. As subsystems are completed, they are programmed and control algorithms are developed. When the robot is nearly assembled, autonomous routines are developed.

Testing is extremely important in the design process. Once the robot is assembled, the team tries to “break” it in as many (reasonable) ways as possible to determine all possible failure points.

The robot is never complete; it is constantly improved upon between competitions with the goal of obtaining increasingly improved performance. Engineering design is an iterative process!

Leadership Positions

Student leadership positions, including team captains, are determined by the lead mentors. Leadership positions can vary from year to year depending on the students on the team. Leadership positions can be chosen at any time for any reason--there are no defined leadership titles or time structure.

Subteam Leads

Subteam leads direct specific aspects of the robot build or awards documentation during the 6-week build season and off-season. Leads will vary from year to year based on student abilities, interests and experience.

Student leads will be expected to be on top of their respective position and put forth an "Einstein Effort" in their respective area.

Team Captains

Team Captains are the student equivalent of Lead Mentors. They will be expected to be at TechFire for meetings if they do not have prior commitments. Team Captains are responsible for setting the overall direction of TechFire projects and making sure that all TechFire students are engaged in a project. TechFire Mentors may or may not specify Captains in a given year.

Competition Positions

Competition positions are chosen by the lead mentors before in-season competitions, and selection for these positions are made for many reasons. Lead mentors will use their experience and judgement to choose roles for each student based on the best interests of the team. Student requests will be taken into account, but not every student can be granted his/her requested competition position.

Students can be chosen for one or more of the following competition roles:

- Scouting (responsible for analyzing the abilities of other robots and picking alliance partners during alliance selection)
- Awards Presentation (responsible for giving the Chairman's presentation and talking to judges in the pits)
- Pit Crew (responsible for maintaining and fixing TechFire's robot)
- Fix-It Crew (responsible for helping out other teams who need robot assistance)
- Multimedia (responsible for documenting events with multimedia)
- Drive Team (responsible for winning matches and determining match strategy)
- Spirit (responsible for making TechFire stand out at competitions)
- Other TBD

Competition Drive Team

The competition drive team is made up of four positions as outlined below:

Driver: this individual is responsible for moving the robot about the field with controls. The driver may be given some control over additional robot functions.

Operator: this individual is responsible for controlling all aspects of the robot not controlled by the driver

Human Player: this individual is an additional member of the drive team whose role is changed from year to year based on rules outlined in the FIRST Robotics Competition game manual.

Coach: Team member who determines pre-match strategy and makes calls throughout a match. All team strategic decisions go through the coach.

The competition drive team is selected by the lead mentors or another team mentor or committee designated by the lead mentors. This designation can happen at any time.

Drivers are responsible for:

- attending scheduled drive practices
- attending all competitions the team attends
- maintaining a high level of dedication to the team

Communication

All communications concerning team meetings, events, etc. will be available in emails from mentors and student leaders through TechFire email accounts. Announcements and events are also posted in our closed Facebook Group. In addition, highlights of our latest activity can be found at our website under "Team Blog".

Students and mentors should demonstrate Gracious Professionalism® at all times, both within and outside the team. This also applies to all internet sites and blogs including Facebook, Twitter and Chief Delphi. Students and Mentors are expected to check their TechFire email or the TechFire forum daily.

Section 4: Students

Application Process

Just like sports programs, TechFire requires a commitment of time and effort by all student members. To better train and plan for our team's success, an application process for student members has been established. This application will be available on our website along with deadlines for application submission.

There will be designated open and closed periods during each season. The open periods will be times for students to come to our shop and explore the team setting and process. After the application deadline, the team is closed to new members until the next open application time. Exceptions may be made to this closed period on a case-by-case basis and must be approved by both the mentor and student leadership.

Attendance

TechFire members participate in skill development programs and outreach events throughout the year. With the understanding that high-achieving students often have varied interests and commitments, team members should stay informed of team events and participate as much as possible. Establishing a record of dependability and punctuality is essential for team organization and efficiency.

Students in good standing are invited to travel with the team and are encouraged to attend any or all scheduled events. Event attendance is not mandatory unless the student is part of the season drive team (driver, operator, or human player).

Good standing is defined as continuous and engaged participation during the offseason, during the build season, and at events. Minimum recommended attendance is an average of 12 hours per week during build season (January - February), one meeting/week during the competition season (March - April) and attendance of at least 2 meetings or events/month from September - December. Students who do not meet the attendance requirement from January - February will not receive official team shirts and will not be able to travel as a member of TechFire. Each student will sign the attendance sheet at meetings.

Academic Standing

TechFire does not prohibit students from participating due to poor grades. However, students are expected to put school and grades before robotics. Robotics is a great activity, but letting grades slack is detrimental to students' long-term success.

TechFire actively encourages students to bring homework to team meetings, especially during build season. The team provides a homework support network and is prepared to provide homework and study guidance to any student who requests assistance.

Remember, school comes first, and if you need to stay home to study or do homework, do it! This is particularly important during the 11th grade/junior year, a critical time for academic performance.

Acceptable Behavior

All members of TechFire rely on each other for the success of the group. Everyone is expected to bring the best of his/her abilities to the group.

Competitions

While at events and functions, students are expected to be respectful of other students, adults, and the facility. Students should not play video or card games and should refrain from playing on any electronic device that is not directly linked to the FRC competition while at the event venue. These activities are, however, welcome during bus rides and at hotels, time permitting.

An FRC event is both a competition as well as a learning opportunity. Our sponsors and supporters like to see students actively engaged at the competitions, both during the matches as well as during the less active portions of events. Students not actively involved in their competition role can benefit a great deal from activities such as:

- Visiting the pits to learn more about the other teams and their robots.
- Talking to other team members, coaches, mentors, and judges to learn more about FIRST and STEAM.
- Talking to other teams and making new friends from other locations and backgrounds.
- Studying Chairman's presentation material which is usually on display at large competitions.

Dress code for competitions and outreach events includes team shirt, closed toed shoes and safety glasses while in the pits or operating the robot. Also, lifting the robot or pulling the robot cart requires gloves.

Unless otherwise noted, our team will remain at all competitions until the end of closing ceremonies (this is very important, so we can show our Gracious Professionalism while other teams receive awards). Permission to leave early must be obtained from a lead mentor prior to the competition.

Team members are not permitted to trade current year official apparel until after the World Championships.

At the Shop and Practice Field

During meetings, students are expected to be respectful towards all present at the meeting. It is the responsibility of ALL students to ensure that the shop is left clean and in working order by the end of the session.

Our team is fortunate that Coupling Corporation of America provides a build site for us. Coupling Corporation is a place of business, therefore:

- Do not wander into other areas (only exceptions are shared public spaces such as the restrooms and lunch room)
- Be respectful of other Coupling Corporation users and their workspaces.
- Keep build site neat. Put away tools at the end of each work session.
- Use garbage cans and empty them when full.
- Clean up food wrappers and drink bottles each day (do NOT leave drink containers at your workspace)
- If a machine or part is not working, let a team leader know before leaving.

Cleanup is the responsibility of each student. Food should not be consumed near machinery, computers, robots or electronics.

Inappropriate Behaviors

Unacceptable behaviors include but are not limited to the following: running in the hallways, pushing and shoving, (negative) name calling, put downs, leaving a disorderly workspace, fighting, swearing, stealing, and all other activities that reflect negatively on the team. Conversations that undermine team unity and respect for leaders are not only counterproductive but destructive; words either build or tear down—if it is not constructive, it is inappropriate.

PDA

In order to reflect a professional demeanor, kissing and other public displays of affection (PDA) are prohibited during team meetings, build sessions, competitions and trips. The couple must also travel in a group at all times. Couples may not wander off or sit alone and should conduct themselves as part of the team at all times.

Disciplinary Action

If a student's behavior is found to be unsafe or otherwise inappropriate, the student may be disciplined as necessary by a mentor. A lead mentor will be apprised of the situation, so that team policies can be enforced. The student's parents will be informed of any disciplinary actions as soon as possible.

Section 5: Mentors and Volunteers

Mentors, who are officially recognized by FIRST, help with technical and mechanical instruction as well as overall assistance with operational aspects of the team. Our mentors are engineers, technicians, business leaders, and medical professionals who volunteer their time to help students successfully run the team. All mentors are required to undergo a criminal background check prior to working with the students.

To enter the shop or transport students, Volunteers will also be required to perform a criminal background check. This can be done for free through FIRST Youth Protection Program system.

In addition to providing support of the FRC challenge, mentors are also on hand to encourage student success outside the shop and competition field. We encourage parents and students to ask mentors about their college and career experiences for guidance and assistance in charting future plans. Check out the "Mentor" page on our website to find out more about the background and experience of our mentors. <http://www.techfire225.com/mentors.html>

Mentor Descriptions and Selection Process

Prospective mentors should submit an application form to be considered for official placement on the team. The form should include a brief résumé of skills, availability, and time commitment to the team. The Mentor Committee, which includes the TechFire Robotics of York (TROY) board, designated parents, and student leaders, will consider all letters of intent and conduct an interview if necessary. Written notification of status and category will be given to all applicants.

The ideal mentor will have:

- Proven leadership skills
- Strong moral character
- Reliability and strong organizational skills
- Enthusiasm for the program
- Demonstrated ability to inspire students

- Time availability and commitment

Lead Mentor

Lead mentors are extensively involved in the planning and overall operation of the team on a regular basis. They are active participants in the decision making process for team operations. Lead mentors have considerable responsibilities for an area of team activity including supervision of students and leading sub teams. Lead mentors are expected to have participated at least one year as an associate mentor in order to learn about the team and policies. A lead mentor is expected to be present and participate in instruction during open shop periods. Lead mentors are also expected to travel to major events and competitions*

Criteria for Selection

- Maintain a professional job and/or have a college or associate's degree
- Have at least 3 years of experience with FIRST
- Have at least 2 years of experience working with students ages 12-18.

Requirements

- Complete background check through FIRST YPP.
- Submit mentor application to the Mentor Committee.

Expectations

- Plan and attend all weekly meetings (noted exceptions for work/family conflicts)
- Attend all regular season competitions and most offseason events (noted exceptions for extenuating circumstances)
- Participate in outreach activities and fundraising events.
- Participate in monthly TechFire Robotics of York (TROY) board meetings
- Participate in regularly scheduled mentor planning meetings.
- Track volunteer hours.

Associate Mentor

Some mentors cannot make the time commitment of lead mentors. Regularly involved mentors with identified team roles or projects to manage are associate mentors. Examples of associate mentors might be a programmer who holds periodic training sessions or a machinist who provides scheduled safety certification and skills training on power tools. An associate mentor's involvement might be a few hours every one or two weeks (more during build season). Parents of students are strongly encouraged to become associate mentors. Associate mentors have full

responsibility for their selected role or project but are requested to defer to student leaders, lead mentors, and TROY advisors on matters of team policy, budget, and strategy decisions.

Criteria for Selection

- Maintain a professional job and/or have a college or associate's degree
- Have at least 1 year of experience working with students ages 12-18.

Requirements

- Complete background check through FIRST YPP.
- Submit mentor application to the Mentor Committee

Expectations

- Attend occasional weekly meetings.
- Assume responsibility for a specific project or role.

College Mentor

TechFire encourages high school graduates and TechFire alumni who wish to continue supporting the team to become college mentors. College students are invited to help team members when time and circumstances allow such as during school term breaks. College mentors are welcome to participate in team activities under the direction of a lead mentor with whom they team up to provide assistance.

Criteria for Selection

- Pursuing undergraduate or associate's degree

Requirements

- Complete background check through FIRST YPP.
- Submit mentor application to the Mentor Committee

Expectations

- Attend occasional meetings and events as permitted by academic obligations.
- Maintain contact with team via email, Skype, etc.

Volunteer

A team volunteer is a parent or community member who helps with team functions such as meals, fundraising, chaperoning, or any other general assistance provided on an occasional basis.

Criteria for Selection

- Enthusiasm for FIRST and desire to help students and mentors successfully sustain the TechFire program.

Requirements

- Complete background check through FIRST YPP.

Expectations

- Attend occasional meetings and events
- Maintain communication via email, social media, etc

If a mentor or volunteer is determined to be in violation team guidelines, FIRST YPP policy, or PA state law, the lead mentor and team director will meet with the mentor to try and resolve the issue.

If a satisfactory resolution is not achieved, the Mentor Committee will vote on an action, which may include required apologies (verbal or written), loss of team positions/privileges, or a final warning notice. All such actions will be explained in writing.

If a resolution still cannot be achieved, the mentor will be asked to leave the team. Any such action will be in writing and will be from the Mentor Committee and TROY directors.

**Mentor and volunteer travel is at the individual's expense and not covered by TechFire.*

2018 Mentor Roster

Lead Mentors

Randall Bryan
Amy Harmon Krtanjek
Donnie Krtanjek
Ben Martin

Associate Mentors

Bill Gallagher
Matt Kline
Leon Lobos
Tom Traina
Doreen Weeks
Kim Neptune

College Mentors

Andrew Lobos

**Team mentors may change throughout the season.*

Parental Involvement

Parents of members are encouraged to participate actively in team activities and help in team operations. Without the participation of generous and experienced team parents, members are well aware that opportunities would be very limited. Appreciation and respect for these volunteers is central to TechFire. There are many ways for families to participate. Here is a brief list of activities which are recommended for parents who wish to help.

- Arrange transportation to and from meetings and events.
- Chaperone students during overnight travel.
- Organize snacks and meals during build season.
- Coordinate food during travel and competitions.
- Coordinate hotel arrangements.
- Organize and assist with fundraising (other than sponsorship. e.g. bake sales, raffles, etc)
- Assist with community education and outreach events.
- Volunteer at events

All Parents should be registered with the FIRST Youth Protection Program to participate with TechFire (registration is free).

Section 6: Budget and Finance

A robotics competition season budget will be proposed to the TROY Board in October ahead of the coming competition year. This proposed budget shall estimate the fees for team registration, attending specific events, estimates for tools, hardware, robot build parts etc, that may be required during the Build Season and include a portion of budget for operating reserve.

Budget Approval: This budget will be reviewed and approved by the Board no later than November 1 of the year preceding the competition season that opens in December of that same year. It shall be used to establish Sponsorship and Fundraising goals for the future competition season.

The Board will revisit the budget the month prior to build season (December meeting) to confirm the amount available for robot and competitions and operating budget reserve. The available funding for the Build Season may be revised at the discretion of the Board's assessment of Sponsorship and Fundraising status.

Budget Review: At the conclusion of the competition season, the Board shall review the process and outcomes of the spending for the season. At that time, recommended process changes will be considered and this policy updated to reflect revised process.

2018 Budget

Budget is TBD for 2018

Student Financial Obligations

There is a \$200 nonrefundable membership fee due Nov 1st. This covers the cost of miscellaneous team incidentals. The estimated student cost throughout the rest of the season is approximately \$1200 which covers student hotel, food, transportation costs, and the World Championship. Please note that this is the approximate cost for an unaccompanied student, not for a whole family. Financial aid may be available for students who qualify for the Federal Free or Reduced Lunch Program. Financial Aid applications are available upon request by contacting the TROY treasurer or a lead mentor.

Fundraising

All students are encouraged to participate in team fundraising activities. The funds raised are typically used for materials for the team and costs associated with competitions. Fundraising often also helps us to get our name out in the community, and so it is required that all students are responsible, respectful, and engaged during fundraising activities, including during setup and teardown.

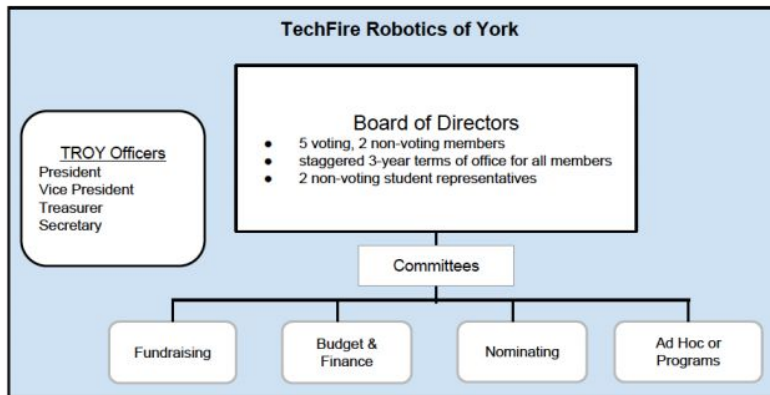
Fundraising may include such activities such as demonstrations, car washes, school sales, SCRIPTS, meals, or other such programs. Students are encouraged to present any fundraising ideas to the TROY fundraising committee to help develop more opportunities.

Sponsorship

Building strong relationships with the community and sponsors is of paramount importance to our organization. To this end, TechFire has a designated individual, the team sponsor liaison, who oversees the communication and interaction with existing and prospective partners.

TechFire Robotics of York

To ensure TechFire’s growth and sustainability over the long run, a nonprofit organization called TechFire Robotics of York has been established. TechFire Robotics of York is a 501(c)(3) nonprofit organization whose mission is to support and sustain local FIRST teams. No salary or compensation is given to any of the individuals associated with TechFire Robotics of York. Additional details about TechFire Robotics of York, including bylaws and tax information can be found at: <http://www.techfire225.com/techfireroboticsofyork.html>



TechFire Robotics of York
LIST OF OFFICERS AND DIRECTORS
2015-2016*

Officers

Donnie Krtanjek -- *President*
Ben Martin -- *Vice President*
Amy Harmon Krtanjek -- *Treasurer*
Randall Bryan -- *Secretary*

Directors

Randall Bryan
Amy Harmon Krtanjek
Donnie Krtanjek
Leon Lobos
Ben Martin

*Officers are elected annually. Directors serve three-year staggered terms and are voting members.

Section 7: Safety

All members must attend the FIRST Youth Protection Policy (YPP) Safety meeting as well as the Machine Shop Safety Course. This course is held during weekly meetings. Lead mentors and student leaders will outline the steps to prevent accidents to individuals, equipment, or facilities. No member can participate in shop or pit activities without taking this orientation.

Team members, mentors and visitors to the shop have a responsibility to maintain good safety practices at all times. Team safety procedures are established for working on the robot, and will be devised for field practice consistent with assessment of the game.

Because no mentor may ever be alone with one single student, it may be necessary on some occasions for a parent who is picking up the second to last student to remain on the grounds until the last student's parents have arrived.

In the Shop and At Competitions

Students and mentors are required to use safety equipment and follow established practices for using equipment and/or driving the robot to ensure safe operations. This includes use of safety glasses when working with power tools, using appropriate tools, ensuring training is conducted and students are supervised when using tools and robot batteries. Details of the team's safety processes are included in the safety manual. Everyone is responsible for ensuring safe practices are followed!

If a student is the first student to arrive at a team meeting and only one mentor is present, any parents transporting the student should remain on-site until another student or mentor arrives.

If you believe anyone, including a mentor, is improperly using a tool or not following established safety procedures, please speak up. Notify the person or a lead mentor.

At Outreach and Demos

Students and mentors will adhere to normal shop safety rules with added precautions for the safety of the general public. Children under the age of 12 are not permitted to operate the robot and must be instructed on the general hazards associated with being in proximity of an operational FRC robot.

Section 8: Travel

The following guidelines have been taken from the FIRST YPP Safety Manual and should be followed for all team travel. Keep in mind that FIRST recommends at least two adults be present with team members while traveling. This practice ensures that help is available in the event of an emergency. Should the conduct of a team member or an adult traveling with the team be questioned, having a second adult present will provide clarity in assessing and reporting safety concerns or incidents.

Safe transportation to and from team activities is the responsibility of the team member's parent or guardian. Team members should only be allowed to leave a FIRST activity under adult supervision appropriate for their age and the circumstances as judged by a team Lead Coach/Mentor. TechFire has established policies to guide our travel, minimize one-on-one interactions and reduce the risk of abuse or misconduct. Adherence to these travel guidelines will increase safety and improve the students' experience while keeping travel a fun and enjoyable experience.

We distinguish between travel to regular meetings, drive practice and local one day competitions or events ("local travel"), and team travel involving a coordinated overnight stay ("team travel").

Local Travel

- Students and/or their parents/guardians are responsible for making all arrangements for local travel. The team and its mentors, managers or administrators should avoid responsibility for arranging or coordinating local travel. It is the responsibility of the parents/guardians to ensure the person transporting the student maintains the proper safety and legal requirements, including, but not limited to, a valid driver's license, automobile liability insurance, a vehicle in safe working order, and compliance with applicable state laws.
- The mentors and/or volunteers of TechFire who are not also acting as a parent, should not drive alone with an unrelated student and should only drive with at least two students or another adult at all times.
- Where a mentor and/or volunteer is involved in an unrelated student's local travel, efforts should be made to ensure that the adult personnel are not alone with the unrelated student, e.g., picking up or dropping off the students in groups. In any case where a

mentor and/or volunteer is involved in the student's local travel, a parental release should be obtained in advance.

- Mentors and volunteers who are also a student's parent or guardian may provide shared transportation for any student(s) if they pick up their student first and drop off their student last in any shared or carpool travel arrangement.

Team Travel

- A completed medical release form is required for every student traveling (even if parents are traveling too). A lead mentor must be aware of any prescription medications, allergies, chronic illnesses, special requirements, etc. FIRST Consent to Travel form can be found here:
http://www.usfirst.org/sites/default/files/uploadedFiles/About_Us/FIRSTYPPProgramGuide.pdf.
- Regardless of gender, a mentor will not share a hotel room or other sleeping arrangement with a student (unless the mentor is the parent, guardian or sibling of the student).
- Because of the greater distances, mentors, volunteers, and chaperones will often travel with the student. No mentor or volunteer will engage in team travel without the proper safety requirements in place and on record, including valid drivers' licenses, automobile liability insurance as required by applicable state law, a vehicle in safe working order, and compliance with all state laws. All chaperones shall have been screened in compliance with the FIRST Youth Protection Program (YPP). All team drivers shall have been screened and the screening shall include a check of appropriate driver's license and insurance. A parent that has not been screened may participate in team activities and assist with supervision/monitoring of the students, but will not be permitted to have any one-on-one interactions with students.
- When travelling unaccompanied, students should share rooms with other students of the same gender, with the appropriate number of students assigned per room depending on accommodations.
- Individual meetings between a student and mentor or volunteer may not occur in hotel sleeping rooms and must be held in public settings or with additional adults present.
- Team meetings may not occur in hotel rooms, but should be done in a public meeting location such as a hotel lobby or conference room, unless no such arrangement can be

made. In this case, team meetings may occur in mentor hotel rooms, but two mentors must be present at all times.

- If disciplinary action is required while the student is traveling without his/her parents, parents will be notified before any action is taken or immediately after the action.
- No chaperone shall at any time be under the influence of alcohol or illegal drugs while performing their mentoring and/or chaperoning duties.

Section 9: College and Career Opportunities

Along with the mission of FIRST, TechFire strives to provide opportunities and guidance in college and career readiness

Scholarships

Leadership will post information on the scholarships offered for FIRST students. Mentors will also be available to write recommendation letters for any students applying to college or for scholarships. "Scholarship Opportunities" meetings will be scheduled on a semi regular basis to inform and instruct students in the scholarship process. Scholarship information is also available online at <http://www.usfirst.org/aboutus/scholarships>.

- David J. Stickler Memorial Scholarship

A memorial scholarship for our mentor and sponsor representative, David Stickler has been established. Details, including application requirements and eligibility criteria will be made available at a later date.

Career Opportunities

TechFire leadership continually seeks opportunities such as job shadowing programs to give students better insight into their chosen professional interest areas

Resume and College Essay Help

As resumes and college essays are an integral part to the application process, students are encouraged to seek help when writing either document or help with editing. Please see a Lead Mentor and they will point you in the right direction for a professional mentor to review your work.

Letters of Recommendation

Letters of recommendation from a program such as FIRST can carry significant weight in internships and college applications. If you would like a letter of recommendation, please contact a Lead Mentor. Requirements for letters of recommendation include:

- Three weeks' advance notice
- Directions and an address for mailing the letter or website link to upload the letter
- A resume of activities
- A short description of what the letter should discuss.

Dean's List Award

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

Similar to the very prestigious National Merit Scholarship Award winners, there are three (3) "categories" of FIRST Dean's List Award students:

1. FIRST Dean's List Nominees (the group of two (2) sophomore and/or junior, students nominated by each FRC team).
2. FIRST Dean's List Finalists comprised of the two (2) students selected at each Regional and students selected at the District Championships.
3. FIRST Dean's List Winners (10 students selected from the FIRST Dean's List Finalists at the FRC Championship).

Teams nominating students as FIRST Dean's List Nominees should note that colleges and universities are extremely interested in recruiting FIRST Dean's List Award students and accordingly, only 10th and 11th grade students (sophomores, juniors) will be eligible for FIRST Dean's List.

The students who earn FIRST Dean's List Award status as either a Nominee, Finalist or Winner, will not only be great examples of student leaders who have led their teams and communities to increased awareness for FIRST and its mission all the while achieving personal technical

expertise and accomplishment, but it is the intention of FIRST that they will continue on, post-award, as great leaders of FIRST ever growing student alumni and as advocates of FIRST.

TechFire is proud to have had two Dean's List Finalists.

Dean's List Selection Process

Candidates will submit an application to include a resume with GPA (weighted and unweighted), a short statement (no longer than 1 page) detailing why they deserve to be nominated, and 3 400x300 dpi photos. These items should be submitted by February 1, 2016 in order to be considered for nomination.

The Lead Technical Mentor and a Technical Mentor chosen by him/her will review the applications and make recommendations on who should be nominated.

The TROY Board will vote for 2 (two) nominees from the recommendations and submit those nominees to FIRST.

Guidelines for recommending participants for this award include but are not limited to:

- Promotes FIRST in our community.
- Participates in team meetings and activities regularly.
- Demonstrates good communication skills.
- Has been an active team member for at least 1 (one) full year.