

Manchester High School West

# PowerKnights

Manchester, NH



## Robotics Team 501 Handbook



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**Mailing Address:**

PowerKnights Robotics  
West High School  
P.O. Box 10032  
Bedford, NH 03110-0032

**Team Website:**

[www.PowerKnights.com](http://www.PowerKnights.com)

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## Governing Documents

The PowerKnights FIRST Robotics Team is an organization operating under the jurisdiction of the Manchester School District. The Manchester School District #37 High School Student/Parent Handbook is the governing document for all rules, policies and procedures to be followed. The PowerKnights FIRST Robotics Handbook supplements the School District Handbook and provides information pertaining specifically to the Manchester High School West team. Any references contained in this handbook, to the "Student Handbook" or "School Handbook," refer to the above-mentioned School District manual, which may be obtained from the Manchester School District Headquarters, 286 Commercial Street, Manchester, NH. Team members must have signed the handbook, thereby agreeing to its policies.

The Steering Committee reserves the right to amend the PowerKnights FIRST Robotics Handbook as necessary throughout the team year. Such amendments will be approved by majority vote of the Steering Committee. Any recommended amendments will then be posted to the team website and all team members are responsible for becoming familiar with its contents and requirements.

## Mission Statement

Team 501, The PowerKnight's mission is to affect the culture of education utilizing the FIRST program. We will enhance the learning of science and engineering, respect the values of various families, inspire innovation, mentor responsibility, promote teamwork and create partnerships, while continuing to be characterized as a FIRST team to emulate.

### **Key Strategies of focus include:**

- Fostering innovation in the creative process, utilizing strategies needed to maintain a highly effective team during the engineering process used to design/build the robot.
- Creating a family respectful of the team, school, local and FIRST communities.
- Delegating responsibility and authority to teammates, thus teaching accountability for their commitments.
- Demonstrating the application of mathematics, physics and science used in solving practical problems through mentoring.
- Developing teamwork skills through brainstorming activities, assigning tasks (business and technical) to involve all aspects necessary to have an effective and professional team.
- Providing an atmosphere with freedom to accept challenges enabling self-discovery, direction and confidence, instilling pride in project completion.
- Attaining gracious professionalism by offering all involved the growth to gain from both positive and negative experiences, allowing for success in present and future endeavors.
- Providing exciting and interesting opportunities for all team members while having **fun!**

Team 501's Mission Statement reflects the Mission Statement of both FIRST and Manchester High School West.

## History

**FIRST - For Inspiration and Recognition of Science and Technology** is the brainchild of Dean Kamen of Bedford, NH; an engineer, inventor and entrepreneur. Mr. Kamen was concerned with the decreasing number of students graduating from United States high schools who went on to study in the areas of science, engineering and technology. The attitude and culture of education in the United States was heading in a direction that would jeopardize the future of the technical workforce of our country. Deciding to address this issue, he created U.S. FIRST. FIRST was designed to inspire high school students to become involved in science and engineering, through adult mentoring, to design and build a robot to play a "task oriented" game. The program grew from 28 teams in 1992 to over 1,000 national and international teams in 2005. Through its international expansion, U.S. FIRST became simply FIRST. As the program expanded, through its Lego League and the VEX robot programs, FIRST became FIRST Robotics Competition, or FRC.

Betty Roy, a math teacher, organized the original Manchester High School West team, "The PowerKnights," for the 1993 competition. In 1994, Public Service Company of New Hampshire (PSNH) became West's corporate sponsor until 2000. During that time, the team's name changed to "Blue Lightning." As Team 146, "Blue Lightning," we earned a reputation as a solid team, winning Good Sportsmanship and other awards at both the regional and national levels. In 1995, Terry Villemure, Jim Pingree and Ed Forcier joined the team as advisors. As the business climate changed in the late '90s, PSNH was no longer able to partner with West High. Betty Roy, Mrs. Villemure and Mr. Pingree retired as advisors.

In 2001, FCI BURNDY, headquartered in Manchester, was looking for a team to sponsor and partnered with Manchester High School West. The team retook the name "PowerKnights" and became Team 501. With Ed Forcier as advisor and Jefferson Hall as FCI's engineer, the team prospered. The team developed a new focus of hands-on participation with an entrepreneurial approach and fostered the philosophy of "gracious professionalism." During this relationship, Team 501 has won three regional competitions and one finalist title at a regional competition. Team 501 has worked hard to embrace and implement the values and philosophy of FIRST. In 2005, Team 501 was awarded the Chairman's Award at the BAE Regional in Manchester, NH and the Kleiner, Perkins, Caufield and Byers Entrepreneurial Award at the Chesapeake Regional in Annapolis, MD. In 2006, the team was awarded the Entrepreneurial Award at the BAE Regional in Manchester, NH along with the Daimler Chrysler Team Spirit Award at the Southern California Regional in Los Angeles, CA. FCI was awarded the Greater Manchester Chamber of Commerce Education Excellence Award for 2007. After being nominated by Team 501, Jefferson Hall was awarded the UNH Young Alumnus/Alumna Achievement Award of 2008.

In 2005, the PowerKnights acquired HomeSeer Technologies as an additional partner. Their software programming strength was a great benefit to our team, in addition to countless other contributions to the team. The president of the company, Richard Helmke, has taught a C-Programming course to the students of the team during the summer for the past few years. He was also the head mentor for the controls committee during the build season, which is responsible for programming software for the robot and creating the controls system. Karen Franz was one of the team's travel coordinators, and also helped to better document the team's finances. In addition, HomeSeer Technologies provided internships to several of the students on the team, particularly those interested in computer science and engineering.

Dynamic Network Services, Incorporated (DNS) came on board as another major team sponsor in 2007. They had previously donated to the team and worked with the students using the VEX kits starting in 2005. Jeremy Hitchcock and Tom Daley have provided the team with valuable assistance in programming and networking skills. DNS adds their

software programming knowledge and is committed to establishing a FIRST Lego League/FIRST Tech Challenge at Middle School at Parkside.

Over the years, Team 501 has worked diligently to become a FIRST team for other teams to emulate. The recognition given to the team by its peers in 2005, exemplifies the team's mission of meeting students' needs and teaching values and methods that will serve students long after they graduate from Manchester High School West.

Team 501, The PowerKnights are proud to be one of the three public school teams located in Manchester, NH, the Home of FIRST.

# Team Member Qualifications

Qualifications to be a team member are important to ensure the goals and objectives of the team are accomplished with quality and efficiency. There are minimum qualifications to be eligible for the team. Like any small technology company, team members need to have a genuine interest (but not necessarily experience) in at least one of the following areas to be effective participants:

## **Technical/Science related:**

Science  
Engineering  
Robotics  
Programming  
Mechanics/Fabrication

## **Non-technical related:**

Publicity/Public Relations  
Fundraising  
Spirit  
Website  
Videography/Animation

FIRST Lego League (FLL) mentoring

When a student joins the team each fall, he or she should complete and return the following by the date specified in order to continue participation:

- Team Membership Information
- Student Health Information
- Student Responsibility Contract
- Parent Responsibility Contract
- What Are Your Interests?

## ***What makes a good team member?***

### **Grades:**

Schoolwork comes first; FIRST comes second. Study skills, classroom assignments, grades, and classroom/school involvement are positive learning habits that are necessary both for school and for technology-related activities. Students are required to be in good academic standing and comply with all behavior standards as defined by the Manchester School District #37 High School Student/Parent Handbook and academic standards held by all varsity team sport members.

### **Ability to Work Both Independently and as a Team Member:**

The ability to work effectively, smoothly and respectfully as part of the team is an asset both for individual members and for the team. However, learning to work independently with little or no direction is also an important attribute.

### **Ability to Commit to a Project:**

Starting a project and following it through to the end is critical to team performance. Team members need to dedicate themselves, because effective team membership requires many hours of a student's free time. Careful planning and scheduling are necessary to stay actively involved and to balance team involvement with schoolwork and other activities.

### **Good Attendance, Punctuality and Dependability:**

These traits are indicators of a student's commitment to their education and future. A team member needs to be available and ready to participate as much as possible. When asked to participate, responding, dependability, and punctuality are essential to team organization and efficiency.

### **Good Judgment, Honesty, Integrity and Positive Behavior:**

Each team member is an ambassador of our team. Team members need to be role models for other students to emulate and respect. Solid behavior choices should be demonstrated at all times, in and out of school activities. All team members must behave kindly towards

all other members on the team and toward the public at large. Other teams are to be treated with respect and gracious professionalism. Proper language and actions will be used at all times.

**Community Involvement and Service:**

Team members are required to perform community service. The FIRST mission is to change the way America's young people regard science and technology and to inspire an appreciation for the real-life rewards and career opportunities in these fields. Team members maintain a year-round partnership with the community, school, sponsors, and other organizations by volunteering to support the spirit of FIRST.

**When Team Membership is Determined:**

If a student is enrolled at Manchester High School West on the first day of the school year, the PowerKnights team membership will begin on the date all required documents are complete, prior to or on the due date of the forms as determined by the Steering Committee (usually October 1). The faculty advisor can, in rare circumstances, make an exception.

Transfer students entering Manchester High School West after the first day of the school year may apply for team membership within the first 30 days of attending Manchester High School West. Membership will be at the discretion of the faculty advisor and/or the Steering Committee.

Each year all returning team members are required to follow the qualification guidelines outlined in the team handbook - meaning they have to reapply. Placement on the team is *not* automatic because of experience.

The PowerKnights will consider membership from students of other school districts. Determination will be at the discretion of the faculty advisor and/or the Steering Committee.

## Participation

The FIRST Team requires many hours beyond the normal school day. Team and subcommittee meetings, events, and activities will be scheduled regularly and as far in advance as possible. Scheduling is the responsibility of the faculty advisor, the team captain(s), committee and subcommittee chair people. Meetings will be announced, via email and the team calendar, to the whole roster so that the entire team is kept current with activities, and so that students may sample new areas of interest.

There will also be occasions, especially during the robot build season, where small groups of students are asked to help out on short notice in ways appropriate to their skills, dedication, and indicated interests (e.g., publicity opportunity, special-skills build, repairs, or parts re-stocking).

Participation falls into two categories: mandatory and voluntary.

*Mandatory* activities are those activities where attendance is required. These include after-school meetings, all-team meetings, build season kick-off activities, and brainstorming sessions. All-team meetings are mid-week evening meetings held monthly to update and educate students, parents, mentors, and sponsors about the team's activities, and to coordinate future activities. Parents' participation in these meetings is valued and encouraged. After-school meetings are required meetings for students on a set day from 2:40 to 4:00 pm. These meetings are used for business, team building, and other team functions.

*Voluntary* activities are those which many students (and parents) find rewarding. These include participation in Steering Committee meetings, fundraising, promotional activities, LEGO League mentoring, design and machining skills development, subcommittee activities, and opportunities to learn about technology careers, companies, and college programs.

Team 501 is independently funded. As the team does not have a dues structure, all team members are required to participate in the Cash Calendar fundraiser by selling 10 calendars each, plus two other team fundraising events, as agreed upon yearly by the Steering Committee. All of the monies collected from these events will be deposited into the General Fund. A student's participation in fundraising events where the monies earned are deposited into the student's individual escrow account is not mandatory.

For each of the three mandatory fundraisers missed by a student who does not have a reasonable excuse, as determined by the faculty advisor, the student will lose a third of his/her team subsidy for any and all trips. After the first unexcused absence from a mandatory fundraiser, the team advisor may dismiss that student at his discretion.

Attendance is taken at all activities and hours recorded. It is the student's responsibility to sign in on the logbook with the attendance mentor. A student may only sign himself/herself in. The attendance mentor will forward all attendance sheets to the keeper of the logbook. All students are expected to be on time and stay the required amount of time. A student may be excused from a mandatory activity by contacting the team leadership in advance with an appropriate reason for your absence.

If attending a voluntary activity, the student will sign in and log attendance and time spent on the activity. Only those hours actually spent participating appropriately will be counted (i.e., working instead of standing around and chatting). Students should also log in hours spent on their own setting up events, designing and building necessary field, activity, or robot items. They should report these hours to the attendance mentor, who will log them in. Students are on the honor system in reporting these hours. If a dispute arises over hours, the adult volunteer overseeing the activity will be asked to mediate. Parent hours will not be counted toward student hours.

If it becomes apparent that the team is not one of a student's priorities, they will be invited to discuss continued participation with the team leadership. If participation is not improved, the student may be dropped from the team. Written notification will be given to the student and parent.

A student must have logged all mandatory activities and at least 30 hours of team activities in order to attend or participate in competitions as a team member. At least 10 of those 30 hours will be community service and/or team fundraising-type team activities, such as Manchester Christmas Parade or Applebees Pancake Breakfast. Those 10 hours must be completed before kick-off in January. If a team member does not receive the 10 hours prior to kick-off, they will not be able to participate in team travel or other activities. Faculty advisors may dismiss a student from the team if necessary.

## School Work

All team members are expected to maintain all their grades and class work during the entire time he or she is on the team. As a Manchester High School West PowerKnights FIRST Team member you are held to the same standards as held by all varsity sports team members. Refer to the Student Handbook for the academic policy.

### **Progress Reports/Report Cards:**

The faculty advisor will monitor your grades. If you are having difficulty with a particular class, it is important that this be brought to the attention of the faculty advisor. Assistance



is available from your counselor, the Manchester High School West peer tutoring program, and of course from the teacher of the class you are taking. All class work is your responsibility at all times.

### **Travel Assignments:**

When we travel, you are required to get all class work, assignments and readings *before* we leave. Getting these assignments is your responsibility. Please allow teachers several days to get these assignments ready for you. Students should bring all required text and materials on the trip. Upon your return to school, all the assignments are due and must be turned in to your teachers.

## **Behavior**

A team member's behavior is under scrutiny at all times. It is very important that you understand that you represent Manchester High School West, the corporate sponsors, and your team. You are expected to exhibit appropriate behavior at all times. This includes behavior within the classroom and school as well as at competitions, the corporate sponsor's workplace, team events, fundraisers, community service events, the website forums relating to FIRST, and online. Boyfriends/girlfriends will refrain from public displays of affection at all events. All policies established by the Manchester School District are followed and enforced by the team. Refer to the Student Handbook for the Manchester High School West policy. The faculty advisor reserves the right to discipline a team member as necessary for the safety and the overall good of the team. The parents will be informed of any disciplinary actions as soon as possible.

The FIRST philosophy of "gracious professionalism" including courtesy, politeness and cooperation with fellow team members, parent volunteers, mentors, advisors and chaperones is expected. All team members' behavior is to be exemplary in all activities, including building, designing, events, both in school and at the corporate partner, and travel. Discipline, including suspension, may be administered as outlined in the Student Handbook.

## **After School Activities**

Many of our activities are after school, usually at 2:40pm. During the first semester, the activities are scheduled as needed and last about 1 to 1½ hours. During the competition season, second semester, we will work each day as required. Students must provide their own transportation home. School policy prohibits students from driving with other students to school related activities. During the build season, the robot will be worked on at both Manchester High School West and at FCI BURNDY Products, which is located at 47 E. Industrial Park Drive, Manchester, NH. Website and programming work may also be performed at Dynamic Network Services, Inc., 1230 Elm Street, 5<sup>th</sup> Floor, Manchester, NH.

### **Procedure:**

During these after school activities, students will work on many aspects of the competition. Meeting activities include discussing fundraising and spirit ideas, making team buttons, and planning future activities. This is also the time that the focus of your subgroup is developed. Strong pre-season preparation makes for less stress during the competition.

There are some specific tool skills that students will learn during the after school activities. Skill building activities that students need to learn or have in order to build the robot will also be taught.

Students will also learn about the components of the robot design process. When available, engineering mentors will present lessons on the usage of motors, the control system computer interface and the programming language. Presentations may also include the

process of designing a robot for the FIRST competition that will occur second semester.

Students are encouraged to spend as much time as possible above the required activity days. This is very important to get the project completed. Attendance will be taken and recorded in the student logbook, recognizing time spent on projects.

At any event either sponsored by or participated in by Team 501, there will be no one-on-one contact between students and adult mentors (with the exception of children and parents). This means that a single adult must always have at least two students present, and a single student must always have at least two adults present.

### **Other Responsibilities:**

It is understood that our students are very busy in many other school activities. These activities are encouraged and supported by our team. It is the responsibility of the student to manage and balance all their activities.

Academics, sports, school clubs, family commitments, and student's employment provide different challenges and different stress upon your time. It is important to communicate with your faculty advisor to work out the timing of your activities. Often these activities can be accommodated to the satisfaction of both.

There are some instances, however, where the timing cannot be resolved. In this case you may have to choose which activity you will be putting your time and effort into. Please discuss this problem with the faculty advisor before you make a final decision.

## Health

Each team member needs to have a complete medical form on record. This form must contain accurate information and be updated as the need arises. This form will be duplicated and taken with us to all events.

Students taking any medications while we are traveling need to have a list of these medications on file with the faculty advisor. Parents should inform the faculty advisor of special needs.

Students participating on the team are required to have medical/accident insurance.

## Team Attire/Costumes

Currently we have a Team 501 shirt. It is an important part of our image and thus must be maintained with dignity and care. Each team member will be given one shirt. Additional shirts may be available for purchase by students and parents as stock allows. The care and cleaning of the uniform is the student's responsibility.

Shirts will be worn on designated days and events. It is important not to cover or alter the shirt in any way.

The team also has PowerKnights costumes that students wear at competitions. These costumes should also be treated with care, not altered, then washed and returned to the faculty advisor after an event.

Any items not returned to the team will be billed to the student who signed it out.

Please remember that all student attire must adhere to the school board policy.

## Email

Besides announcements made on Westview, the **website and email are used as the PRIMARY mode** of dispensing information to both team members and their parents during the year. It is the fastest and most efficient way to communicate team meeting schedules, fund-raising events, work sessions, etc. to a large group of members, therefore, team members should **check their email frequently**. If you have a question, like when is this or that happening, check the website.

At the beginning of the year, students will be asked to provide email addresses for themselves and their parents. Parents are included because they are frequently affected by after-school meeting schedules, fundraising activities and the intense six-week robot design/building phase. It is important that these events be communicated to everyone. The list of email addresses will be distributed to the team so that students may coordinate carpools and participation with others. However, emails to be broadcasted to the team and/or parents will be routed through the adult responsible for team emails (email blaster) so that information is timely, accurate, and not in conflict with other emails. Please allow at least 24 to 48 hours in advance of when you want the email blaster to broadcast the email.

Please check your email **DAILY** (after school and nights) for announcements of upcoming scheduled meetings, as well as last minute announcements. It is your responsibility to respond to the person coordinating the activity.

If you and your parents do not have the ability to receive email, please let the faculty advisor know so arrangements may be put in place to keep you informed. If your email address changes, please inform the faculty advisor or email blaster, so your records may be updated and you will not miss any communiqués. Your new contact info will be broadcast to the team.

## Website

The World Wide Web has become a powerful tool and influence in the world today. The goal of our website ([www.PowerKnights.com](http://www.PowerKnights.com)) is to be one of the best sites in the FIRST organization - innovative, informative and always serving the common good of FIRST.

Each year the active webmaster will choose/mentor a freshman or sophomore to manage and monitor the website. There are many sections to our website: team calendar, forums, photos, team news, etc. There is also team history, team awards, and other sections dedicated to our team.

The website also has a calendar of activities. All activities are posted on the calendar and students and parents are urged to check it often. All students are encouraged to view the site regularly and become active participants/users. Please be careful about your comments and responses as they reflect upon our team.

## Mentors

The success of the team is highly dependent on skill sharing. This skill sharing process is called "mentoring." A mentor is a close, trusted, experienced counselor or guide. Mentors work one-on-one or with a small group on selected projects. Mentors guide the work process, get their hands "dirty" only when needed, but in general, their duty is to guide the student in task management and accomplishment.

Mentors need to have good communication skills, an ability to communicate at the student level, patience, a high frustration tolerance, gracious professionalism, respect, but most of

all, they need a good sense of humor. Also, one does not need to be an expert to help the team. We each have skills and experience that young people do not have and your contribution to younger teammates is valuable. Please consider being a mentor.

Team 501 will provide appropriate instruction to mentors so they may be successful in the process. All mentors are accountable to the faculty advisor. If needed, mentors may have to get a police background check and fingerprinted.

At any event either sponsored by or participated in by Team 501, there will be no one-on-one contact between students and adult mentors (with the exception of children and parents). This means that a single adult must always have at least two students present, and a single student must always have at least two adults present.

## Engineers/Mentors

In their professions, engineers and mentors are responsible for many innovations. These professionals dedicate many hours of their personal time to the team. Their expertise allows the dreams and ideas of the students to be transformed into reality.

Take the time to communicate and get to know these very talented and nice people. Ask them questions and do not hesitate to ask advice for they have a wealth of knowledge. They are valuable resources.

Students shall treat the engineers, mentors and other adults with respect at all times. When addressing them please use appropriate titles unless asked otherwise.

## Work at Corporate Workplace

Often the team will meet and work at the corporate sponsor's workplace. Transportation to this location is the responsibility of the students or parents.

Brainstorming meetings are open to all students and are a place where students should feel free to express their ideas. However, before attending these meetings, students are required to have previously read the game handbook in order to know such things as how the game is played, the game rules and how points are earned. Students should also know robot final design restrictions, such as height and weight. Having this knowledge will enable students to have feasible design ideas to put forth before the team and engineer.

Since there are many students on the team, not all students can be at the corporate workplace at all times. A schedule will be made up by either the engineer or the faculty advisor so students will know what times are available for them to work. Because work at the corporation is often intense, stressful, and needs to be done in a short period of time, only experienced students will, for the most part, be invited to attend. Students may not go unless invited. Students should not volunteer with the engineer for a position in building unless truly committed to see the task completed. Students need to be 75-100% involved for this part of the build.

During periods of slow building, students should not be idle. If there are too many students, someone should either consider leaving or choose to stay active and involved by getting together with other students and going over the game rules and strategies, or even by doing homework.

Since engineers/mentors do their paid job during the workday, students are not allowed to call them without going through the faculty advisor. If you are allowed to call, please keep the conversation short.

When invited to go to the corporation, please treat their offices, building and all employees with respect. Voices should be kept low and students should stay in the designated areas at all times and with other team members. Inappropriate behavior will not be tolerated. Students will comply with all behavior requests made by an adult, such as a team parent who might be there to bring food or to help with robot build. Remember, we are the corporate sponsor's guest.

## Election of Team Captain(s)

Each spring, a Team Captain or Co-Captains is/are elected to represent and lead the students for the next team fiscal year. The Captain/Co-Captains shall preside over the various student subcommittees and will be the main leader for other students to turn to. The Captain(s) will work closely with the faculty advisor, the Steering Committee and mentors, representing the students and their viewpoints. Should a Captain fail to live up to his/her duties, as agreed upon by the Steering Committee, the Steering Committee reserves the right to remove the Captain and call for another election if necessary.

The Team Captain(s) will be elected by the majority of students. The Captain(s) term, which will commence after the current year has ended, will be for a period not to exceed one year, after which an election must be held to determine the next Captain(s). The Team Captain(s) may be re-elected and there is no limit to the number of terms they can serve.

To be a candidate, the following prerequisites are necessary:

- Must have at least one year experience in the Manchester High School West FIRST Robotics program.
- Must maintain all school prerequisites regarding grades and other issues.
- Must make a commitment to attend and represent the students at Steering Committee meetings.

The election of a Team Captain(s) is as follows:

- Anyone interested in running must submit a letter of intent to be a candidate in the election to the faculty advisor by a date set by the Steering Committee.
- On that date, the candidates will meet with the faculty advisor to review the obligation involved in becoming captain. If both the advisor and candidates are in agreement, the candidates' letters will be forwarded to the team for their review.
- All members of the team will be asked to attend the elections after school on a set date.
- Once all candidates have been introduced, they will have a few moments to make their presentation to the group.
- An anonymous ballot voting system will be used and the votes will be tallied by the faculty advisor and an adult member of the Steering Committee, involving no students. The results will then be announced after the votes are counted.
- An absentee ballot may be obtained from the faculty advisor prior to the election, at the discretion of the faculty advisor.

## Drive Team Selection

### **Drive Team:**

The Drive Team consists of a driver, operator, human player and coach.

Each candidate may be required to pass a written test based on their knowledge of the game and the basics of the robot. Students wishing to drive the robot must know the rules of the game. Driving and operating practice is required to develop the necessary skills.

The Drive Team is required to stay with the robot at the competitions. A major responsibility is the maintenance and repair of the robot.

**Selection Criteria:**

Some general criteria to be used when selecting the Drive Team will include sportsmanship, grades, participation, ability to fix the robot, strategic understanding of the game, driving skill, leadership, tact, diplomacy and ability to perform under pressure. Team seniority may also be a consideration in selecting the Drive Team.

The Drive Team will be chosen during the fourth week of the build period. Selection criteria will be identified after kick-off and prior to Drive Team try-outs. This is the time period when it is crucial to become familiar with the robot and the rules of the game, as they will be included in the selection criteria.

**Selection Committee:**

A committee consisting of the faculty advisor, two engineering mentors and two team students will select the main Drive Team and a backup team based on a competitive selection process. The Steering Committee will select the two engineering mentors and the two student members for the Drive Team Selection Committee.

The students who serve on this committee will be expected to meet with the faculty advisor and engineering mentors to refine the Drive Team selection criteria and to be available to observe driver/operator/human player/coach tryouts. They may also develop the written test and hands-on tests given to the Drive Team candidates.

Students who serve on the Selection Committee may not be candidates for the Drive Team.

The Selection Committee will also decide the roles of the primary and backup Drive Teams in competitions. Students selected as the driver, operator and human player for the Drive Team will compete at both the local competition and the travel competition, unless a Drive Team member is not going to the travel competition, in which case, another student will be selected to take his or her place. Should a tryout for a specific Drive Team position be held at a different location or time than the other positions, an adult team mentor must be present at the tryout.

## FIRST Robotics Competitions (FRC)

Each year, the Manchester High School West FIRST team usually participates in two FRC regionals. These may both be at the regional level, or one may be a regional event and the other, the Championship competition.

When attending a competition requiring travel, hotel and meal expenses, students will be expected to pay for their portion of the costs incurred by the group as a whole. These costs are estimated well in advance of the trip and may be covered by funds raised through the student's participation in fundraising activities or direct payments.

**Schedule:**

All competitions take up three days (excluding travel) and generally follow the same schedule:

*Thursday:* The Drive Team and selected pit crew members arrive at the event early to set up the pits, unpack the robot and start the robot inspection. This is a busy time. The remaining team members need to cooperate and follow the requests made by the faculty advisor or engineering mentors.

*Friday:* This is the start of seeding rounds. It is expected that all team members are together as a team and support the Drive Team as they compete. Activities are scheduled

and brief informational meetings are held as needed. These communication meetings are required for all team members.

*Saturday:* Seeding rounds are completed and final competitors are announced. Finals matches are played. Afterwards, an award ceremony is held. All team members are required to attend. Some team members may be needed to help pack the crate and robot. If necessary, the team departs for home unless a Sunday activity and travel is planned.

### **Regional Events/Championships:**

There are currently over 40 regional events held in the U.S. and internationally.

Which regional events we attend is dependant upon location and timing of the events, and whether or not we will be attending the Championship event. The Travel Coordinator, under the direction of the Steering Committee, will decide which competition the team will go to.

The Championship Event is very similar to a regional event in many ways, but on a much larger scale. There will be teams from all over the world! Championship travel is usually late Tuesday afternoon or early Wednesday morning. Students travel in groups at all times. At no time will a student be without a "buddy" and they will always keep the faculty advisor or group leader informed as to their whereabouts. Students are expected to be back at the hotel at the predetermined time for a team meeting.

Our trips are more than just robotics competitions, as we make efforts to provide educational and cultural experiences during non-competition times (evenings and possibly the day before and/or after a competition). The nature of these experiences depends upon availability and cost of the experience.

### **Competition Protocol:**

There are certain practices that we have found to be very successful and have earned us many rewards and the respect of the FIRST community.

*Cheering:* Cheering is more than yelling at the top of your lungs. True cheering is enjoying the event and celebrating the excitement of the moment. Organization is the key to this being a powerful tool. Your spirit leaders will give you direction and guidance for this activity. You are not expected to be cheering 100% of the time, however, when we are cheering, all team members are expected to stand and cheer to the best of their ability. Sitting in the stands looking bored or carrying on personal conversations while others are cheering is not good for the team image.

*Award Ceremony:* During the ceremony we will applaud the teams that are winning awards. When we applaud we will stand to show our respect for what they have accomplished. In the event the team wins an award, the team will, if FIRST allows, go to the field and receive the award and return to our seats.

### **PIT Etiquette:**

Space is limited in the pits and safety is the first priority. There will be a Pit Safety person in charge of maintaining all safety procedures established by FIRST at the competitions. The Pit Safety person will be responsible for monitoring the number of people authorized to be in the pits.

*Pit visitors MUST wear safety glasses at all times!*

### *Things We Do Not Do At An Event:*

- Students may not play cards or any other games while competition is taking place. Refer to School District Handbook.
- Our team will not engage in negative behavior toward another team or team member.
- Our team will not display displeasure over any decision by a referee or judge.
- Team members will not exchange negative remarks to each other, no matter what the situation.

## Travel

Traveling as a team is exciting and is often the highlight of the year's activities. Traveling to FIRST events is a **privilege** earned by team members who have maintained good grades and participated in mandatory team activities. Students traveling as part of the team will behave professionally, following guidelines given in the Manchester West Student Handbook and provided by the adult team members.

Usually, the entire travel group goes for the full duration of sightseeing and competition. However, if a student is unable to attend the full duration trip, they may attend **just** the competition **if** they travel with a parent or legal guardian and make their own airline reservations.

### **Procedure:**

During the summer months, the Steering Committee will consider various regional/national FIRST competition sites to attend. Final decisions will be voted upon before the beginning of each school year. Team members will be informed about **tentative** travel arrangements in September. Students will be given general information about travel dates, costs and deadlines. During the next few months, students should be participating in mandatory and voluntary team activities, as a minimum number of hours of participation are required for travel. Do not wait until the last few weeks to get your hours in (see Requirements for Team Travel). As the travel date approaches, students will be asked to make deposits and submit signed travel forms. Unless otherwise approved by the Steering Committee, all travel expenses are to be borne by the student. Students and parents will be required to attend travel meetings to review details of the trip.

While on the trip, students will be asked to travel with a "buddy" and often stay in small groups with a chaperone. The team will travel together at all times **with no variation in itineraries**. College visitations with a student's parent/legal guardian may be allowed with prior approval. In addition to FIRST competitions, time will be made available for sightseeing and other fun activities. Students will be assigned roommates for hotel stays and roommate requests will be considered. If a student would like to consider going on a team trip, that student is encouraged to watch for all Travel Coordinator announcements.

### **Requirements for Team Travel:**

- In order to participate in a team planned trip, students must have participated in all mandatory activities and have completed 30 hours of voluntary activities (see Participation)
- These requirements must be completed by March 1
- Travelers (students and adults) must meet all qualifications of a good team member (see Qualifications)
- Travelers must meet all travel payment dates set by the Travel Coordinators
- Students requesting specific accommodations must contact the faculty advisor regarding travel arrangements



- Students over 16 must have a valid picture ID (drivers license, Passport or NH issued identification) by the date selected by the Travel Coordinators
- Students under 16 may use their Manchester High School West ID
- Insurance card (or photocopy)
- Travelers must have all **signed** required permission forms in by the dates selected by the Travel Coordinators
- Travelers must travel with one suitcase and one carry-on, with name and address identification tags attached
- Travelers are responsible for carrying their own luggage
- Travelers must attend a Safety Committee Meeting
- Students under 18 may not travel in a private vehicle without written parental permission

#### **Air Travel:**

- Departure: A designated time and place will be announced. Be on time, we cannot wait for any students.
- Security: Airport security is tight. Follow airport directions for baggage claim and boarding bus to the hotel.

#### **Hotel:**

Students will be organized into room groups of two, three or four students depending upon number of students and room availability. We try to honor all requests for roommates. A chaperone is assigned to monitor and coordinate activities. Room keys are distributed at a designated location. Your chaperone will be available for questions.

#### **Behavior Expectations:**

Students and chaperones are expected to behave in a professional manner as they are representing the school and the team. Everyone is expected to follow the student handbook, the policies of the Manchester School District and the expectations of the faculty advisor, mentors and chaperones. Students must not leave a venue or hotel without notifying the faculty advisor or chaperone. Students will utilize the buddy system.

#### **Travel Chaperones:**

Only adults who agree to travel with the team **at all times** and follow the set itinerary completely, are eligible to be chaperones. In order to keep a large group functioning smoothly, chaperones will not be allowed to take side trips, see friends/relatives in the area, or arrive/depart at different times. Those parents/mentors who would like to travel with their own itineraries are welcome to do so, but must make **all** travel arrangements (hotel reservations, airline reservations and meal arrangements) themselves. Chaperones will be assigned to be responsible for small groups of students when traveling. Students will be assigned to these small groups by the Travel Coordinators. In the event of a shortage of seats (e.g. bus transportation), only one adult chaperone per family will be allowed to travel. **No alcohol consumption or smoking is allowed at any time during team travel by either students or chaperones.**

## Financial Oversight

All funds raised, donated or expended must follow Manchester School District protocol. All income will be given to the school accountant for deposit into the Manchester High School West FIRST Robotics account. These accounts are audited to verify that accurate records are kept.

Reimbursements from the team's general fund to anyone (advisor, mentor, chaperone, parent, student) require approval of the Steering Committee prior to the expenditure and must be signed off by the appropriate pre-assigned adult coordinator and/or the faculty advisor. Expenditures become the responsibility of the individual unless and/or until

approval by the adult coordinator and/or Steering Committee for reimbursement from the general fund has been determined. The procedure for reimbursement of expenses and a list of designated adult project coordinators are available upon request from the Financial Overseer.

When a check needs to be issued, the requester must submit an invoice or proof of the occurred expenses in order to receive reimbursement. The request, with documentation, is given to the faculty advisor who submits the paperwork to the school accountant. A check is usually cut within two days and forwarded by the faculty advisor to the requester.

The school accountant only provides an income/expense report with no detailed references. A running balance can be provided to the faculty advisor at any time. Detailed reports will be kept by the Financial Overseer of the team.

## Fund Distribution Guidelines

### **Guidelines for the allocation of money received as a result of fundraising efforts during the 2009-2010 school year.**

There will be a general fund with individual student travel escrow funds.

All corporate sponsorship revenue will be placed in the general fund.

General funds will be used to pay for registration fees, robot building, spirit merchandise, advertising and all other in-common expenses.

Student escrow funds will be used to pay for student travel expenses.

Student escrow funds may be held over from year to year.

Family direct contribution will be put into the student's account unless directed by the family to be put into the general fund. Parents/students who pay deposits for travel expenses and later fundraise may be reimbursed up to the amount received from the family. However, monies earned by fundraising will not be distributed in cash to any student. These funds will be assigned to future student travel expenses or to the general fund after the student has left the team.

Prior to all fundraising events it will be determined by the Steering Committee how to allocate the raised funds by following guidelines below.

All funds raised by individual family efforts through fundraising activities will be put into the students' accounts unless otherwise directed by the family.

All funds raised as a result of direct appeal to businesses and corporations will be put into the general fund to be used to off-set in-common expenses (registration fee, robot building fees, operating expenses).

The team will make every effort to honor sponsor requests of allocation of funds not to exceed the corporate donation.

For those families with two or more students on the team, escrow funds may be transferred between students at the family's discretion.

At any time, the family may choose to donate student escrow funds to the general fund.

No funds will be allocated to chaperones other than the Senior Academic Advisor.

Chaperones/parents must pay in full for their own portion of travel expenses by the due dates set for all deposits or they will not travel with the team. No funds from the general fund will be allocated to chaperones or parents' travel expenses.

Reimbursements from the general fund to anyone (advisor, mentor, chaperone, parent, student) require approval of the Steering Committee prior to the expenditure. Expenditures become the responsibility of the individual unless/until approval by Steering Committee for reimbursement from the general fund has been determined.

The cost of operating the team changes every year. There are fixed costs controlled by the FIRST organization and uncontrolled costs based on the cost of robot parts and the number of student team members traveling to competitions. The priority of general fund expenditures will be first to the in-common expenses and then to individual team member travel expenses.

The General Operating Fund will provide the seed money for the competition year.

The goal of the team will be to end the competition year with a General Operating Fund balance equal to entering the next year's local competition and the cost to build the robot.

The Steering Committee reserves the right to amend these guidelines as necessary throughout the team year.

## Steering Committee

The Steering Committee is composed of the faculty advisor(s) and his/their appointees, and typically, but not necessarily limited to, the following: the student representatives, parent representatives, sponsor representatives, and the financial overseer. Its purpose is to guide the team throughout the year to accomplish technical, educational, financial, and marketing goals. It is responsible for setting regular meetings, making policy decisions, and making sure documentation exists on financials, team decisions, and the robot build process. It will also set and publish guidelines for student escrow accounts and carry-over funding. The committee and funding will function using a July 1 to June 30 fiscal year. Only Steering Committee members may vote on Steering committee motions. Steering Committee meetings are open.

1. **Faculty Advisor(s)** – the faculty member(s) of Manchester High School West that are designated as the advisor(s) for the team.
2. **Student Representative(s)** – typically student team member(s) who have been elected as Team Captain(s) and who create the SC agenda and the All Team agenda.
3. **Parent Representative(s)** – minimum of two and typically parent(s) of team members whose function is to help and advise the Student Representatives.
4. **Sponsor Representative(s)** – may be a parent and/or sponsor whose function is to act as a liaison between sponsors and the Steering Committee and to protect the interests of sponsors.
5. **Financial Overseer** – This position is an adult whose function is to provide periodic detailed summaries of all income and expenses representing the financial condition of the team.

## Committees

The team is comprised of five main committees: IT, Finance, Technical, Community Relations, and Administrative. Each committee is responsible for specific functions and is described below. Each of the committees will have a Student Committee Head and an Adult Mentor Head. Students may belong to as many committees as they like, however, a

student may only be the Committee Head to one committee. A representative from each committee is required to attend Steering Committee meetings.

All of these committees are equally important to the success of the team, and are dependent on one another to allow the team to function as a whole. The listing of the duties of each committee is by no means complete, but they provide a good overview of the types of tasks each committee will be performing.

**IT** – This group is in charge of all things software related. This group will be running our C-Programming class, along with 3DS Max or Inventor classes that we may have throughout the summer. This group will form the Controls Committee during the robot build season. In addition, this group is in charge of the team website and creation of animation awards submissions.

**Finance** – The finance group is in charge of coordinating our fundraising events, the Ambassador program, creating the budget and bookkeeping for the general fund and escrow accounts.

**Technical** – The technical group's main job is to design and construct the robot during the build season. This group also coordinates machining classes, field construction, safety and scouting.

**Community Relations** – This group performs functions that center around the theme of granting the team a favorable image to the community. Jobs of this group include publicity, photography, videography, FIRST and community awards submissions, team membership and the coordination of community service activities. In addition, this group will be in charge of our mentoring activities, including FLL and FTC. Spirit also falls within this committee.

**Administrative** – This group performs administrative functions, including maintaining the hours log (with support from other committees), updating the handbook, record keeping, arranging travel, and special event planning to include arranging field trips and guest speakers. Also ensures that all meetings, events, robot build, and related issues are in compliance with our handbook, FIRST rules and guidelines.

## Sample Subcommittee Descriptions and Functions

Each of the five committees described above are comprised of subcommittees responsible for specific functions that a committee is responsible for carrying out. Descriptions of some of the current subcommittees follow. In any given year there may be additional ones, or some listed here may evolve into having different responsibilities. By dividing into specialized groups, students are able to focus on specific aspects of a project that are of particular interest to them, while offering them the opportunity to try something new. We all have many talents to discover and offer.

Commitment and follow-through are crucial to accepting any assignment. As one of our corporate mentors once said, "If we all do our little jobs, the big job gets done." (Patricia Ballard, FCI) Regular communication between subcommittees is essential for the smooth functioning of the team.

All groups will report to the Student Committee Head and/or the Adult Mentor Head. Subcommittees will coordinate with each other on certain projects and will communicate professionally. Students may contribute to more than one subcommittee.

**Website (IT):**

This group develops and maintains our website: [www.PowerKnights.com](http://www.PowerKnights.com). Members of this team need to have internet access at home and have or be willing to learn basic HTML.

**Animation (IT):**

If Autodesk software expertise exists within PowerKnights team members, an Animation Team may be formed to create a 30-second animation video that addresses the published Animation Award subject of the year. The final result may be submitted to FIRST for judging with all other regional competition entries.

**Financial Reporting (Finance):**

The Financial Reporting Committee provides the team with a detailed account listing of the following items:

- Donors and their contributions
- Income from various fundraising
- Budget preparation
- Expenses and the reason for the expense
- Accounting of student travel balances

These account listings will be held in a separate set of books that will provide a detailed summary of income/expenses for future analysis.

**Fundraising (Finance):**

The Fundraising Committee is responsible for planning and carrying-out fundraising activities. The proceeds from some fundraising events directly benefit the students that participate, while money from other events is added to the team's general fund.

First thoughts about fundraising tend to be to avoid this group/activity; however, fundraising is a vital part of our team and an activity with many benefits beyond the financial. Fundraising involves people skills and it can be a lot of fun. There will be several activities to participate in, something for everyone. If parents have an objection to their student participating in any fundraising event, they should speak to the faculty advisor to discuss an alternative arrangement for their student's contribution.

Fundraising activities may include a raffle, candy or candle sales, tag days, Bedford Dump Day, and letter writing campaign. Each year the PowerKnights become more innovative in their fundraising activities, proving again, we are a team to emulate. Just ask about "tossing shirts around in Atlanta."

**PowerKnights Ambassador Program (Finance):**

This program was developed to build a strong corporate sponsorship program solicited by the students. The Ambassadors are members of the PowerKnights team who are trained in business etiquette and presentations. Students visit corporations and present the team's mission and accomplishments. Ambassadors may ask for financial and/or in-kind sponsorship. They will be prepared to answer such questions as "How can my company help the team?" All team resources will be used in these presentations - short DVD clips, brochures, website references. We hope this will lead to a closer relationship with our corporate donors and, in turn, expose our student Ambassadors to the workings of the business world.

**Technical (Technical):**

The "Techies" have several functions depending on the time of year. First and foremost, committee members are responsible for knowing the current year's game manual, including robot specs and game rules. They are responsible for maintaining current robots and tools.

They develop the robot and work in the pit area at the competitions. Techies will be responsible for inventory of parts, storage and labeling, and sign-out maintenance.

**Scouts (Technical):**

The Scouting Leader will be chosen prior to the competitions. Students on this team will develop materials and methods to assess the competition, giving our team as much advantage as possible. The collection of data and the analysis of the information will assist our team in all phases of the competition. The team works to hone interviewing skills and presentations. They often speak directly to groups, judges and the media. Often they are stationed outside the pit area to greet other team members and present our image to the public. Every team member is a scout and represents Team 501 at all events.

**Community Relations (Community Relations):**

This group works closely with Spirit, Publicity and the Ambassadors. There are endless opportunities to promote the team and to make new partnerships within the community. Some activities may include scheduling field trips, bringing in guest speakers, procuring food donations and raffle prizes, and expanding the mentor program of FIRST Lego League.

**Publicity (Community Relations):**

The Publicity Committee manages the team's image and community presence by the frequent, timely, and effective design and release of communications about the team and its activities. They create such items as a team resume to be distributed at competitions, newspaper articles, brochures for fundraising and public awareness events. During the six-week build process, weekly updates are created. The team will use a variety of media, including a digital format, to enhance write-ups. All team members are encouraged to try their hand at writing during their career as a PowerKnight and to contribute their ideas for publicity.

**Video (Community Relations):**

Throughout the year, the Video Team may have multiple tasks to accomplish:

- Create a video that will document all aspects of the PowerKnights FIRST experience. A shortened version of it may be used to help with publicity or fundraising efforts.
- Record the activity of our robot during practices and all competitive matches. This will enable the team to analyze its performance, as well as the strategies used to play the game.
- Film the performance of other team robots. This can be helpful for formulating game strategies.

The students on this team should have an interest in using the video camera and doing editing using computer software.

**Spirit (Community Relations):**

The Spirit Committee is responsible for designing and acquiring the team attire, including costumes, t-shirts and buttons. They are responsible for trading materials and give-aways, team banners and flags.

The Spirit Committee coordinates with the Publicity Committee in organizing community activities such as the Christmas Parade, Made in NH Expo, public awareness demonstrations, and community service. This is another area where our innovation grows each year as we "gallop" forward.

**Travel (Administration Support):**

Travel arrangements for the team are made by the Parent Travel Coordinators and the Student Travel Coordinators (two students with team experience – preference give to upperclassmen). These positions are appointed by the Steering Committee in September. The Coordinators' jobs are to make hotel reservations, arrange transportation, plan sightseeing activities, plan meals and coordinate other travel-related arrangements for the

team. They are responsible for planning, budgeting and researching all aspects of travel related to designated competitions.

The Travel Coordinators plan for the following competitions:

- Local (Verizon)
- Regional (outside of NH)
- Championship

Once the decision to attend a regional or championship competition is made, the Travel Coordinators' duties include: creation and collection of travel forms, collection of payments and establishment of due dates, reservations/confirmations, transportation - air and/or bus, hotel arrangements - including room assignments, sightseeing arrangements, restaurant and/or meal planning, liaisons with Manchester High School West and Manchester School Board for trip approval, chaperone identification, and coordination of all check-in and check-out procedures for airlines and hotels.

The Travel Coordinators are **not** responsible for transportation for the robot, tools, supplies, banners, costumes, etc.; arrangements for those attending only **part** of a planned trip (e.g. attending only a few days of a planned itinerary); anyone who is not a team member (e.g. siblings); Nonrefundable/Nontransferable reimbursements (e.g. airline tickets); student personal items that are lost or misplaced during a trip; homework assignments; healthcare expenses.

## Manchester's River Rage and Other Local Competitions

All robotics teams have invested time, effort and money into building their robots. A team from Plymouth, MA, decided that it was a shame to put this effort and fun away until the following January. They decided to put on a one-day local event to continue the momentum; it was called "Rumble-On-The-Rock." Today, there are several one-day local events throughout the country. Team 501 usually attends "Mayhem-in-Merrimack," "Battlecry at WPI" and our own "River Rage."

River Rage is a local event sponsored by Manchester High Schools Central, Memorial, and West and Trinity High School. The event is held at one of the high schools. River Rage, started in 1997, is the oldest of all local events in the world. Manchester High School West's contribution to the effort is to help set up, teardown, cook and help with organization. Manchester High School West is the prime mover in this event.

The philosophy behind the local competitions is to let students have fun. Any student is allowed to drive, operate, be the human player or coach in these events. Typically, students take turns in each of these positions. Students learn what it takes to be in the "hot seat" for those two minutes and how well they can handle the pressure. Parents are encouraged to coach a few matches to understand what the pressures are during a match. Locals are our training sessions for future drive team members.

## FIRST LEGO League

FIRST has three educational programs. The oldest is FIRST Robotics Competition (FRC), the second is FIRST LEGO League (FLL), and last is the FIRST Tech Challenge (FTC).

FLL follows the same philosophy as FRC, but is partnered with LEGO blocks. FLL is designed for middle school students. They also get a game challenge, need to build a task-oriented robot with LEGO pieces, and work as groups just like a FRC team. The major differences are that the FLL season is from October through December, and the second is that students are mentored by high school FRC students, many of whom are graduates of that FLL middle

school. FTC involves using VEX kits and also has a game challenge, need to build a task-oriented robot, and work as groups just like a FRC team.

The PowerKnights were mentors to McKelvie Middle School in Bedford, NH for many years. High school students have learned what it takes to be a mentor and middle school students have learned how much fun FIRST programs can be. The PowerKnights are in the beginning stages of mentoring a FLL/FTC program with the Middle School at Parkside, Manchester, and FLL program at Cawley Middle School in Hooksett. PowerKnights students are encouraged to become mentors.

## Off-Season Activities

The PowerKnights are a year round team. After our last FIRST competition, the team becomes active in other areas. Foremost are the local competition events, where all team members have the opportunity to drive, operate, coach and be the human player. Other activities may include team building events such as hiking or softball games, participating in the Manchester Christmas Parade, fundraising, community service events and demonstrations for service groups. When offered, team mentors work with students on technical problems.

## College and Career Opportunities/Scholarships

The Manchester High School West FIRST program is an excellent way to explore the career of engineering. During this program, students will be exposed to many principles of engineering and the mentoring skill of engineers from corporate sponsors. We recognize the fact that not all students will pursue careers in engineering. It is our goal to expose students to technological careers including, but not limited to, engineering. We highly encourage all students to discuss the career of engineering with their mentors and/or corporate engineers. Students are encouraged to take pre-engineering, math and science classes during their West experience. BAE Systems in Nashua offers career awareness days which students are encouraged to attend.

There are many scholarship opportunities associated with the FIRST program. The faculty advisor will be providing information regarding these as soon as they are made available. There is also information listed on the FIRST website at [www.USFirst.org](http://www.USFirst.org). In 2008, over 8 million dollars in scholarship awards were available to FIRST Robotics team members.

## Parent Responsibilities

Parents are an integral part of our team and are very important to our continued success. Parents are also a key factor in the motivation and dedication of their student. Supporting their son/daughter in all aspects of their team involvement is key to them getting the most out of the program. Parents are encouraged to participate in team activities whenever possible.

Parents have several responsibilities. They are:

- Parents will participate as mentors, offering their guidance and expertise on various subcommittees.
- Parents must be the prime leaders in the FIRST philosophy of "Gracious Professionalism."
- Parents are expected to assist their student in all fundraising activities.
- Parents are expected to attend mandatory meetings unless they have notified the faculty advisor in advance or their child is legally an emancipated minor.



- Parents are expected to provide transportation to/from local events, including but not limited to, after school meetings/work sessions, Saturday work sessions, and local competitions.
- Parents are expected to provide timely transportation for the student, making sure that they are at the required events on time and ready to participate. Often we will leave for a competition very early in the morning to facilitate transportation. Parents are expected to have the student at the designated location at the prescribed time. We will not delay transportation.
- Upon return from an event, parents are expected to provide transportation at the designated time. Late transportation causes an inconvenience to all involved.
- Parents are expected to provide accurate medical information and to keep the faculty advisor informed of all changes.
- Parents are expected to participate in the River Rage Competition by assisting with food service, set-up and teardown. This event serves as a fundraiser.
- Parents are also expected to provide spending money as is appropriate when we are at events or competitions.

## Team P.O. Box for Correspondence

The following address has been established for the team. Please use it to send in required team and travel forms, payments for travel, and donations from sponsors.

PowerKnights Robotics  
West High School  
P.O. Box 10032  
Bedford, NH 03110-0032

## Website and Email Addresses

**Website Address:**

[www.PowerKnights.com](http://www.PowerKnights.com)

**Lead Mentor Email Address:**

elf305@yahoo.com

## Payments to the Team

Please make all checks out to **WHS – FIRST Robotics Team**

Also, please put the student's name and school ID number in the memo line of the check.

## Required Forms and Permission Slips

The following pages contain important forms each team member will need to complete. You can find an electronic version of these forms (E-FORMS) available online. Please see [www.PowerKnights.com](http://www.PowerKnights.com) to fill these out electronically.

Instructions for filling out E-FORMS:

- Go to [www.PowerKnights.com](http://www.PowerKnights.com).
- Click on "Resources" on the left side of the page.
- Click on the "Team Membership Forms" link in the top table for Team Members.
- You will need Adobe Acrobat to view the forms. Visit [www.Adobe.com](http://www.Adobe.com) if you do not have this installed.
- You may see a message that says "This document contains Interactive Form Fields" at the top of the page. At the right of this bar, check "Highlight Fields."
- The blue areas that appear are the areas to fill in.
- When you have completed the form, please print the entire document. Sign and date where indicated, and return the forms as directed.