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## STUDENT APPLICATION – DUE JUNE 15, 2010

### STUDENT INFORMATION

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

### SCHOOL INFORMATION

High School: \_\_\_\_\_ Grade: \_\_\_\_\_

Principal of School (contact for trips): \_\_\_\_\_

School Phone Number: \_\_\_\_\_

### STUDENT INTERESTS

Please answer each of the following questions in 100 words or less. If necessary, you may attach additional pieces of paper to this application, but please number your responses so that we are able to properly coordinate them with the questions. There is no “correct” answer to these questions, and your answers will not be the determining factor in joining the team, they are simply to help us learn more about you prior to your interview.

Q1) Have you been involved on a FIRST Robotics team in the past? If so, what was the team number and what was your role on the team?



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Q2) Why would you like to be a part of Metal Muscle?

Q3) What do you hope to gain from an experience with FIRST and Metal Muscle?

Q4) Are you planning on attending college? If so, please tell us what college(s) you are interested in attending as well as what you are interested in studying in college.

Q5) As a part of the competition season (March and April), Metal Muscle typically travels to some competitions which are not local and require airline travel and overnight stays in hotels. Is there any reason that you would not be able to travel with the team? If so, please explain.



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Q6) During the build season (January and February), Metal Muscle typically meets at Kettering University from approximately 10AM to 8PM on Saturdays and Noon to 5PM on Sundays. Is there any reason that you would not be available during these times? If so, please explain.

Q7) During the summer and fall, Metal Muscle typically meets multiple times a month (usually on weekends) for various reasons. Returning students will be required to organize fundraisers and community service activities which new students are asked to participate in if possible. There will also be "Tech Days" scheduled at Kettering in order to familiarize students with the tools available to the team as well as to discuss lessons learned from previous years robots and potential ideas for this year's robot. Is there any reason that you would not be available during these times? If so, please explain.

Q8) Are you involved in other extra-curricular activities? If so, what are they and what days/times do they typically meet?

Q9) What skills do you think you will bring to Metal Muscle?



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## **BUILD SEASON INTERESTS**

January and February is considered “Build Season”, and this is when the team will actually design and build the robot and prepare for the competitions. During Build Season, the team splits into smaller groups to handle specific tasks. Please review the groups below (and continued onto the next page), and tell us your group preference by ranking them from 1 to 9 with “1” being the group you are most interested in and “9” being the group you are least interested in. There is no “correct” answer to these questions, and your answers will not be the determining factor in joining the team, they are simply to help us learn more about you prior to your interview.

- \_\_\_\_\_ **Chassis/Drivetrain** – The chassis group focuses on the mobility of the robot. They are responsible for creating the foundation of the robot, to which all other components will mount. Also, they must choose a drive system consisting of wheels, transmissions, chain, sprockets, etc. that will create a mobile robot that will be effective in the game.
- \_\_\_\_\_ **Arm** – The arm group is challenged with designing the scoring mechanism for the robot. This involves using motors, pneumatics, springs, and other methods to create the scoring portion of the robot. This scoring mechanism must be effective and robust while competing with other robots.
- \_\_\_\_\_ **Electrical** – The electrical group is responsible for providing the required power and signals to the devices on the robot in order to provide functionality. This group will work closely with the Arm and Chassis groups to make sure there is no interference with any mechanisms, while at the same time providing adequate support in mounting the electrical components and making sure the wires are laid out in a neat fashion and are clearly labeled to avoid confusion. They will also be responsible for creating the control board.
- \_\_\_\_\_ **Programming** – Programming group is responsible for the software that is programmed into the robot. This software will control the robot autonomously and also based on human inputs, such as joysticks or buttons. Programmers will be responsible for maintaining organized and well documented code, daily backups, laptops, and all necessary hardware required to communicate with the robot. Programmers will also be responsible for utilizing internet resources to solve problems both with hardware and software.
- \_\_\_\_\_ **Field Assembly** – The field group will construct a replica of the game field. This replica must be solid and accurate as it will be used for practice and verification of the robot’s design. This group will supervise any other teams that may be invited to use the practice field, making sure they have the appropriate equipment available. Also, this group is responsible for constructing the bumpers for our robot.



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— **Media** – This group will be responsible for taking pictures and video throughout the season. That media will be used to update the team’s display case in Kettering. Also, they will work with the website team to provide them with updated video and pictures. Finally, they will compile a final video after build season for our Chairman’s Award submission, along with the documentation required for the submission. This is the most prestigious award in FIRST and requires an excellent submission that will be judged at each competition.

— **Website** – This group will work on the design and layout of [www.metalmuscle.org](http://www.metalmuscle.org). This includes learning HTML code to create a website that proudly displays various parts of the team such as sponsors, build season progress, fundraisers, community service, etc. It is also the responsibility of this group to create ways of increasing team communication for both build and non-build season events. This group will work with the media group to obtain updated pictures and video during the season and convert those files to web friendly media. This group is also responsible for submitting for the Website Award.

— **Team Spirit** – Team spirit is essential at each of the competitions and this group is responsible for helping us prepare for that. They will be creating buttons, key chains, and other trinkets to hand out to other teams and visitors. They are responsible for maintaining the costume and fixing anything that needs repairs before each competition. They are also challenged to create new ways of interacting with other teams by creating chants, songs, or dances. Also, they will design flyers and pamphlets to share information about Metal Muscle’s robot and team, for use both at competitions and during the offseason when recruiting new students.

— **Animation** – This group will compete for the animation awards. These animations will generally revolve around some sort of theme, which typically changes every year much like the game does. They will use Autodesk software and are challenged with making a unique and creative animation that will support the theme, while at the same time, convey the message of FIRST.

## COMPETITION SEASON INTERESTS

March and April is considered “Competition Season”, and this is when the team will actually compete with the robot against other teams. Similar to Build Season, the team splits into smaller groups to handle specific tasks. Please review the groups below (and continued on the next page), and tell us your group preference by ranking them from 1 to 7 with “1” being the group you are most interested in and “7” being the group you are least interested in. There is no “correct” answer to these questions, and your answers will not be the determining factor in joining the team, they are simply to help us learn more about you prior to your interview.

— **Human Player** – The Human Player is responsible for either trying to score points or trying to load the robot so that it can score points, depending on the game. We won’t know the details of the Human Player’s task until the game is announced, but it always relates to either trying to score or trying to assist the robot in scoring.



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- \_\_\_\_\_ **Drivers** – There are two Drivers who drive the robot during the match. Typically, one driver is responsible for navigating the robot around the field while the other is responsible for using whatever the scoring mechanism on the robot is. Both drivers need to be able to work together effectively for the robot to be effective.
- \_\_\_\_\_ **Driver Coach** – The Driver Coach is responsible for watching the entire field and communicating with the drivers, as they are typically focused on just our robot. The driver coach needs to be able to pass along information regarding what the other robots on the field are doing as well as make recommendations on the best course for our drivers to be either trying to score or prevent the opposition from scoring, depending on the circumstances of the match.
- \_\_\_\_\_ **Pit Crew** – This group makes sure that the robot is running correctly, and is responsible for fixing anything on the robot that became broken or disabled during a match. This group also has to ensure that the robot always has a fresh battery, and that the pit remains organized. Often times other teams will require assistance either in the form of parts, tools, or just another set of hands to help, and Pit Crew is asked to help others whenever possible as well.
- \_\_\_\_\_ **Greeter** – The greeter remains near the pit, and is responsible for answering the questions any of the many judges have for the team, as well as the questions many other teams will have. Teams send scouters through the pit to discuss the capabilities of other team’s robots and how they may effectively compete together in the game, and the Greeter needs to be able to answer all their questions and effectively describe our robot as well as our preferred strategy.
- \_\_\_\_\_ **Scouting** – This group investigates other robots to determine how they function and what their preferred strategy is. This information is important to learn both about the robots which are on our alliance as well as the robots which are on the competing alliance. This group is also responsible for handing out the team to team awards which Metal Muscle gives out at competitions.
- \_\_\_\_\_ **Mascot** – Metal Muscle has a mascot costume which is used at competitions. Whomever is the mascot must have plenty of energy, as the mascots for all teams are very active and will often be hanging out together as well. The mascot will present the team to team awards with the Scouting group.

Student's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Please submit completed application by June 15 by either:

- E-mailing a scan of the completed application to [Applications@metalmuscle.org](mailto:Applications@metalmuscle.org)
- Mailing the completed application to: Denise Denis  
8153 Staghorn Trail  
Clarkston, MI 48348