

# Linn-Mar Robotics

## Parent/Mentor reference

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



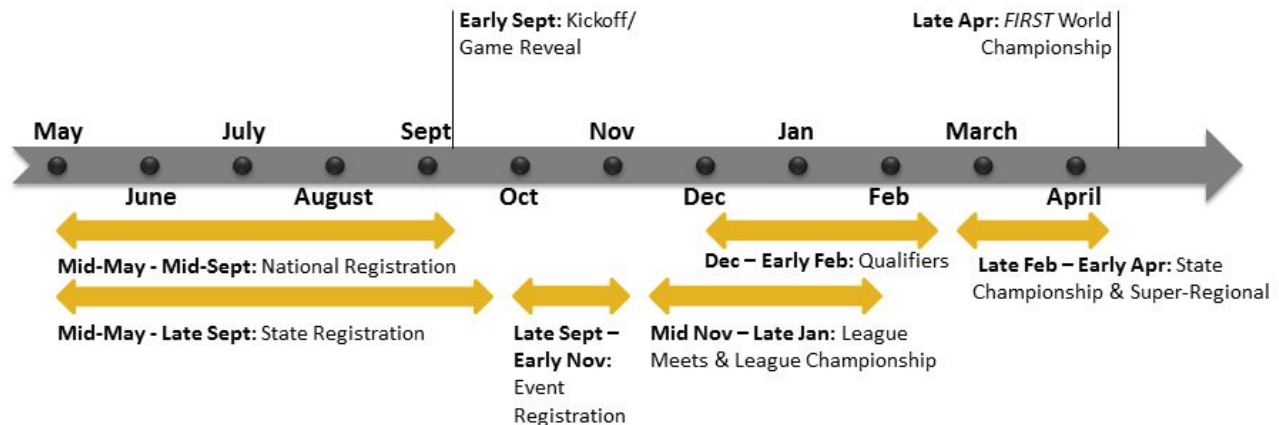
**Empowering students to become technology leaders through experiential learning and mentorship**

Linn-Mar High School Robotics (LMR) has the goal to inspire our members. To accomplish this, we build robots that play sports! We have teams that compete in FIRST Robotics Competition (FRC) and FIRST Tech Challenge (FTC). These competitions are organized by the non-profit FIRST (usfirst.org), whose mission is to inspire young people to choose careers in STEM fields (science, technology, engineering, math). Younger students have the opportunity to participate in Jr. FIRST LEGO League (Jr. FLL, ages 6-9) or FLL (ages 9-14), often assisted by LMR students. Across Iowa there are over 5,000 students involved in FIRST. There are FIRST teams in over 80 countries.

Students that participate in LMR during their high school career have access to up to \$20M in scholarships. <http://www.usfirst.org/scholarshipsearch.aspx> They can also make a positive stride toward meaningful internships and connections aligned to their interests and goals.

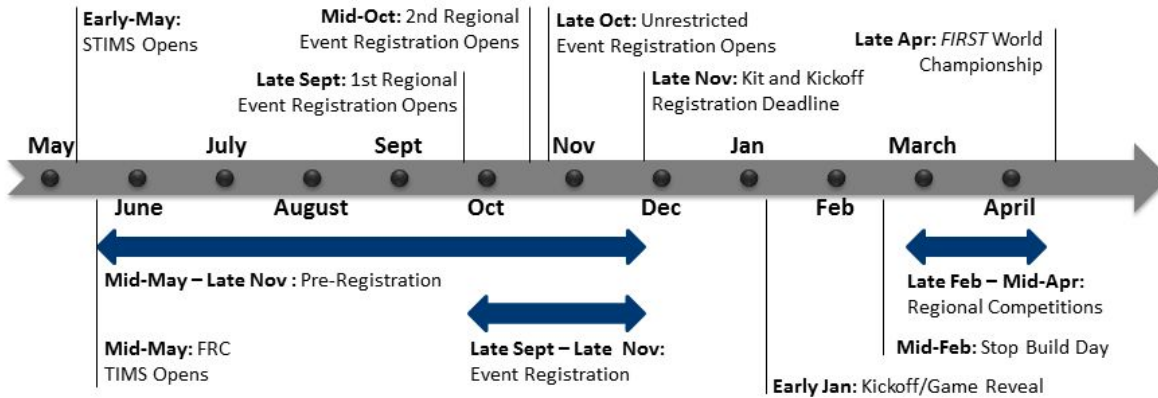
### FIRST Tech Challenge (FTC)

- FTC builds robots fitting in a 18 inch cube that compete in groups of 4 on a 12 ft square field.
- FTC is especially active in the fall, but it does have championship level events in the spring
- Competitions are in Iowa, including an event at Linn-Mar High School (date TBD).
- Low travel costs to attend competitions (except State Championship in Coralville and World Championship in St. Louis)
- Less missed school days for competitions (potentially zero missed days)
- We have three teams, which can have 15+ members each.
- It's easy to get started building and programming FTC robots, and it can be as sophisticated as the students are able.
- 3 FTC teams at LMR (over 200 across Iowa in >24 leagues):
  - A League of Their Own (ALoTO, FTC 10107)
  - Dark Matter (DM, FTC 4150)
  - Lost in Time (LIT, FTC 4324)



## FIRST Robotics Competition (FRC)

- FRC builds large robots (120 lbs, 5 ft tall) that compete on a 54 ft x 27 ft field
- FRC is especially active in the spring, including a grueling 6 week build season in Jan/Feb.
- Iowa's new Regional competition at the UNI-Dome, so our travel cost could be less this year to surrounding states for our competitions.
- Competitions take place in March and April throughout the country.
- Students miss about 2.5 school days per FRC competition attended. Competition trips cost about \$200-250 per trip per student. Students may attend one trip or multiple trips (not required; we highly recommend participating in at least one). We attend 2-3 competitions per year.
- Learning to build FRC robots is very challenging, and the amazing mentors can teach you.
- FRC is very exciting and offers many opportunities to work with cool technologies.
- Linn-Mar's FRC 967, the Iron Lions, is our FRC team. We are one of 9 Iowa teams.



There are many roles for LMR students:

**ROBOTICS IS MORE THAN  
ROBOTS**

**COMMUNICATIONS**  
SCOUTING  
PROJECT MANAGEMENT  
ROBOT DRIVING

**MARKETING**  
ASSEMBLY  
NETWORKING

**DESIGN**  
FINANCE  
FABRICATION

**WEB DESIGN**  
VIDEO EDITING  
PHOTOGRAPHY  
PROGRAMMING

**CHECK IT OUT @ THE LEARNING MEDIA CENTER**  
**7 PM - 9 PM ... SEPT 1 & 3**  
**8 AM - 12 PM ... SEPT 5**

## Linn-Mar Robotics - Mentor / Parent Involvement

Our team benefits from help from a number of parents and professional mentors who give time to help our team out. If any parents are interested in getting involved, they can also help out our teams!

### How Can Parents Help?

- Become a mentor! Mentors do not need to attend all meetings. Being able to regularly attend at least one of the days per week is very helpful.
  - Non-technical mentoring is very helpful: sometimes we just need adults who are capable of thinking organized thoughts to keep a group of 3-4 students on track.
    - Examples: help students create a display, proofread an email, create a blog post, practice a presentation, organize photos, create meeting minutes, create a brochure, write a business plan, etc.
- Provide food for a Saturday lunch or a build season weeknight dinner. The shop will be open from 3:30 PM to 9:00 PM on certain weeknights when we get really busy, and in Jan-Feb we'll stay well past noon on most Saturdays. If each family can provide one meal, that would be extremely helpful. Meals can be simple stuff like soup, chili, pasta, sandwiches, etc. Hungry kids aren't that picky.
- Drive a Van: sometimes we bring students to local events in vans; we also take rental vans to out of state competitions (school bus is not an option out of state, unfortunately), and we need mentors and parents to drive most of those vans. The trips are really, really exciting! Most trips entail a Wednesday through Saturday commitment.
- Connect us with a Sponsor: The budget is always "interesting," and it's always easier to connect with a new donor if we can find a connection through a parent. If you know of a potential sponsoring organization, please put us in touch! A lot of organizations are very interested in helping LMR once they learn what we do.
- Donate: Occasionally parents choose to donate to LM Robotics, and of course every bit helps a lot. If your employer matches gifts to 501(c)3 non-profit organizations, a donation can be made to Linn-Mar School Foundation (<http://www.linnmarfoundation.org/>), and they will send 100% of the donation to LMR.
- Attend an Event: Come to a competition and cheer us on! Several FTC events will take place within 50 miles on Saturdays, including an event at LMHS (date TBD). Or road trip to an FRC or FTC event - come and watch on a Saturday and you'll be hooked.
- Volunteer at an Event: Events always need lots of volunteers. We'll need many volunteers for our own, so please consider helping out. We'll also need a few volunteers for Linn-Mar's Booster Club concessions, although our students should be able to take care of that responsibility.
- Spread the Word: If you get excited about what we're doing to get kids fired up about STEM and robotics, don't be reluctant to spread the word around. The more people who are involved in this endeavor, the better!

We really appreciate the support of our parents. I know you're busy people, and I know it's expensive to put your children in clubs. We try to keep the costs of dues and trips as low as possible, and there are things we can do in cases of financial need (contact me if applicable).

If you'd like to help out in any of the ways listed above, please keep an eye on your email - more information will be coming out in the weeks ahead.

Parents are always welcome to come to a meeting and see what we're up to.

## Communication

To receive Twitter messages via text on your phone, text “follow LMRobotics” or “follow LMRwherewhen” to 40404

- Twitter is an important communication tool
  - LMRobotics is used for outbound marketing and communicating with the world (i.e. match results during the competitions, and exciting news)
  - LMRwherewhen is used for Meeting time/location/cancellations,
  - Twitter feed can be found at our website [www.lmrobotics.com](http://www.lmrobotics.com)
- We also use email for longer stuff, especially information about upcoming competitions
  - Please make sure you are on my email list
- Dan Niemitalo contact info: 319-400-2730 (cell), [dniemitalo@linnmar.k12.ia.us](mailto:dniemitalo@linnmar.k12.ia.us)
- Andy Marshall contact info: 319-929-1588 (cell) [amarshall@usfirst.org](mailto:amarshall@usfirst.org)

## Important Dates

FTC Game Reveal (Start of FTC build season): 09/12/15 (West Des Moines, 9 AM - noon) (LMR has been asked to present on several topics)

FRC CowTown Throwdown invitational: (tentative) Oct 30-31 (Lee’s Summit MO)

FTC initial League meet: November time frame, location TBD

FTC following League meets: dates TBD (will be throughout November - January) locations TBD

FRC Game Reveal: 01/09/16 (location TBD, likely Cedar Falls)

\*FTC Iowa State Championship: March 4-5, 2016 (Coralville Marriott)

FRC Regional Events: TBD; best early guess is March 12-15 (StL, MO) and March 26-29 (MN)

\*FTC North Region Super Regional Championship: March 17-19 (Cedar Rapids US Cellular Center)

FRC Iowa Regional: March 23-26, UNI Dome Cedar Falls

FRC North Star Regional: April 6-9, Univ of MN, Minneapolis

\*FTC & \*FRC World Championship: April 27-30 (St. Louis, MO)

(\* teams participate in these events if they qualify in previous events)

## Schedule

- “Shop” (door 5B, North side of Linn-Mar High) Tues/Thurs, 7-9 PM, and Sat 8 AM to noon.
  - [Click here for map](#)
- Members are expected to attend all meetings unless they have a conflict with another school activity. It is understood that there will occasionally be conflicts. Members should be able to attend at least half of all meetings; prospective members who have significant conflicts with other activities may need to realistically evaluate their schedules and decide what activities they can fit in (feel free to discuss with Mr. Niemitalo).
- Members are expected to manage their time, including homework time, to allow them to attend meetings. This requires planning in advance.

## Academic Expectations

Robotics members are expected to maintain good grades. Additional resources are available to robotics students to help them succeed in classes, such as peer tutoring and access to professional mentors. Students are always allowed to bring homework to a meeting and work on it.

## New Member Checklist

1. There is a fee of \$50 that should be turned in to the Linn-Mar Cashier (scholarship available

[www.lmrobotics.com](http://www.lmrobotics.com) (twitter) @LMRwherewhen @LMRobotics

based on financial need)

- a. You get one embroidered Polo and one team shirt as part of dues; the rest of the apparel/ other materials is added to a small amount of funding to the Robotics Department (represents approx. 10% of our budget)
2. Talk to Mr. Niemitalo and take assignment to one of our 4 teams
3. Register online in STIMS (Student Team Information Management System)
  - a. <http://www.usfirst.org/roboticsprograms/ftc/stims>
  - b. Have a parent electronically sign your consent and release form
4. Turn in a completed orange medical information card
5. Follow us on Twitter (@LMRobotics; text "follow LMRobotics" to 40404 or go online)
6. Follow us on Twitter (@LMRwherewhen) this is how we'll up date where and when for numerous dynamic events.
7. Submit a shirt order form (coming soon; find out if your family wants shirts for competitions)
8. Get on Mr. Niemitalo's email list and check it when notified of new info (notified via Twitter)
9. Sign up for Trello (project mgmt software at **trello.com**) and get added to LMR organization
10. <https://groupme.com/> for each FTC/FRC team's inter-team discussions.

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**more of the Why, What, and How...**

What is FIRST (compliments of John Deere):

<https://www.youtube.com/watch?v=P4C-G5nA5sg&index=26&list=LLXT4Da6gmG-Ofg7ioGVV9sQ>

Team formation for success:

[https://www.linkedin.com/pulse/team-formation-success-andy-marshall?trk=pulse\\_spock-articles](https://www.linkedin.com/pulse/team-formation-success-andy-marshall?trk=pulse_spock-articles)

Gracious Professionalism:

<https://www.youtube.com/watch?v=PCGsLAyrck4>

Small Iowa town team with a BIG goal; an example of why some students work so hard:

<https://www.youtube.com/watch?v=LnreObood7Y&index=12&list=LLXT4Da6gmG-Ofg7ioGVV9sQ>

FIRST is about turning the culture around; an example from a team in Alaska:

<https://www.youtube.com/watch?v=IQMpvCg1ABU&list=LLXT4Da6gmG-Ofg7ioGVV9sQ&index=6>

Marion Businesses view of LMR:

<http://lmrobotics.com/wp-content/uploads/2015/04/Marion-Process-Solutions-4.27.15-AD-PROOF1.pdf>