



***FIRST* in Michigan Robotics Progression of Programs**



Build Robots. Build Leaders. Build Futures.
STEM Robotics Competitions for Grades K-12



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What is *FIRST*?

For Inspiration and Recognition of Science and Technology

- Dean Kamen, founded to change culture away from sports to to engineering (now STEM)
- Fun filled, innovative progression of STEM programs that mimic sports
- Purpose is to create passion for STEM careers



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What Makes *FIRST* Unique?

- Partnership with Education, Industry, Government
- Students working side by side with engineers and technicians
- Only varsity sport where everyone on the team can turn “pro”
- Over \$25,000,000 in college scholarships: create passion, provide the resources to pursue



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<http://youtu.be/i1QyM9WTF18>



***FIRST* in Michigan Robotics Progression of Programs**

***FIRST* Programs in Michigan**

Goal of Michigan Progression:

Engage them early, keep them engaged all the way through high school



- ***FIRST* Robotics Competition (FRC)**
High School
- ***FIRST* Tech Challenge (FTC)**
Middle school
- ***FIRST* LEGO League (FLL)**
Upper elementary – (starting in 4th grade)
- ***FIRST* LEGO League Junior (Jr.FLL)**
Early elementary (K-3)

More than Robots • Gracious Professionalism • Outreach • Business



***FIRST* in Michigan Robotics**

Progression of Programs

HIGH SCHOOL- *FIRST* Robotics Competition (FRC)



TIMELINE:

January – April

DESCRIPTION:

5 ft tall, 120 pound
remote-controlled robot

Common kit of components

Autonomous and driver
control mode

C++, Labview or Java

GRANTS:

State Grant and Private Grants
make first year **virtually free**



FIRST in Michigan Robotics **Progression of Programs**

MIDDLE SCHOOL- *FIRST* Tech Challenge (FTC)

TIMELINE:

January – April

DESCRIPTION:

18" x 18"
robot-controlled robot

TETRIX kit of components
Android based cell phone

Java only

Autonomous and driver
control mode

GRANTS:

State Grant and Private Grants
make first year **virtually free**





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LATE ELEMENTARY (4+)- *FIRST* LEGO League (FLL)

TIMELINE: Late August - early December

DESCRIPTION: Table top LEGO EV3 Kit
Fully Autonomous
Sensors





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Progression of Programs

Grades K-3- *FIRST* League Junior (Jr.FLL)



TIMELINE: School year

DESCRIPTION: WeDo 2.0

Programming

Exhibitions



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Why should Students Participate?

- Application makes school relevant
- \$20,000,000 in college scholarships
- Connections to companies
- Test areas of interest before choosing major
- Leg up on competition
- Shore up tools in life skills bag



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Why should Companies/Colleges Participate?

- Help grow their future workforce and student body
- Make their companies/schools visible to students
- Hand pick best suited students
- Re-energize current workforce
- Use as talent pool for summer internships/scholarships
- Network with 300 Michigan companies



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How Can a Company Get Involved?

- Mentors to work along side the students
- Financial Support
- Mentors to work along side the students
- Build Space
- In-Kind Donations

MENTORS NEEDED:

- Mechanical
- Electrical
- Programming
- CAD
- Business
- Fund-Raising
- Marketing
- Outreach



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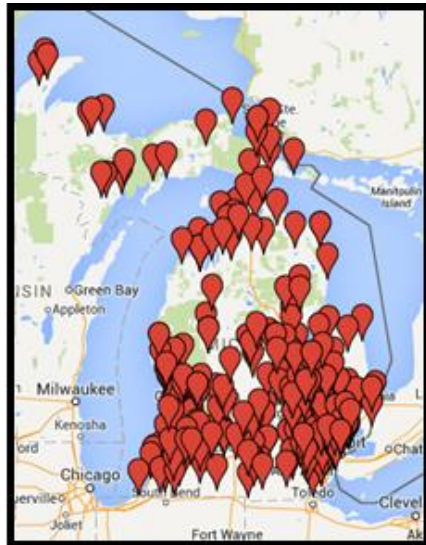
Progression of Programs

Impact Across All Programs

412

FRC Teams
High School

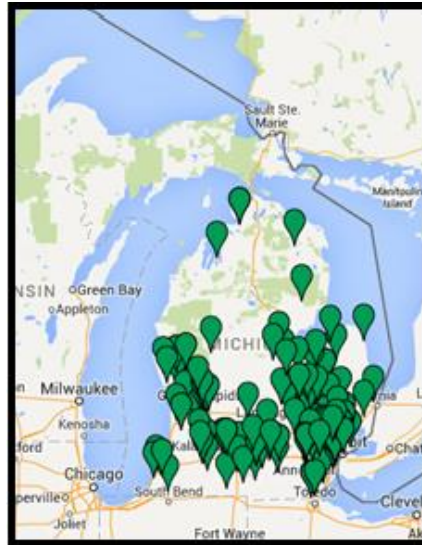
12,360 Students



274

FTC Teams
Middle School

4,080 Students



470

FLL Teams
Upper Elementary

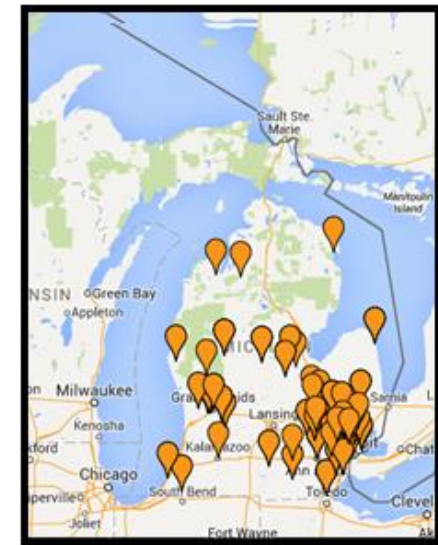
4,700 Students



346

Jr. FLL Teams
Grades K-3

2,076 Students



MICHIGAN LEADS THE NATION IN FRC TEAMS!!!!



***FIRST* in Michigan Robotics**

Progression of Programs

GM Involvement



Founding Sponsor

- Over 20 years of sponsorship
- Direct sponsor of 75 teams, 22 of which are international
- Encourage mentors at all levels

Established Pipeline

- Investment in future talent, development of current team members
- Exposure to successful Product Development in a short timeframe.
- Develops leaders



FIRST in Michigan Robotics Progression of Programs

Ideal Pipeline for Detroit STEM Development





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2016 FRC Competition Schedule

Experience the exhilarating event yourself!

http://www.firstinmichigan.org/FRC_2016/frc_2016_season.html



***FIRST* in Michigan Robotics**

Progression of Programs

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