



ELM CITY ROBO SQUAD

FIRST ROBOTICS COMPETITION (FRC) TEAM 558



www.elmcityrobosquad.org

558



Name	Elm City Robo Squad
FIRST Robotics Competition Team Number	558
Nickname	five-five-eight
Motto	Family, School, Robots
Rookie Year	School Year 2000-2001
Location	Hill Regional Career High School, New Haven, Connecticut
Founders	John Buffa and Jim Crowe from United Illuminating Co.
School Affiliation	Hill Regional Career High School
Team Demographics	School Year 2016-2017: 51 students: 29 girls, 22 boys
Volunteer Mentors	1 Teacher Mentor from Hill Regional Career High School 22 Mentors including 17 Engineers, 3 Parents and 3 College Students
Major Sponsors	United Technologies, United Illuminating, Yale University, Comcast NBCUniversal, Hill Regional Career High School/NHPS, Parker Hannifin, Svigals + Partners, Walmart Foundation, Best Buy Foundation, National Instruments, Frederick A. DeLuca Foundation, Community Foundation for Greater New Haven
Summary of Growth	2000: 7 Students, 2 Mentors, 3 Major sponsors 2017: 51 Students, 22 Mentors, 12 Major sponsors
Meetings	Weekly September through December Monday through Saturday, January through April Monthly May through August
School Financial Status	Title I / 81% Free & Reduced-Price Lunch
Website	www.elmcityrobosquad.org
email	elmcityrobosquad@gmail.com
Phone	203-693-1558



Our Mission

Our mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, technology, engineering and math (STEM) skills in a diverse urban setting with a diverse student body where we create a culture of acceptance, pride, respect and excellence.

Our Program

The Elm City Robo Squad robotics program is a free after-school activity designed to inspire young people to pursue careers in science, technology, engineering and mathematics (STEM). Our students design and build complex robots, learn business skills, win scholarships and simply have a great time. The program is based at Hill Regional Career High School, a Title I school, and is open to inner-city high school students, young women and men in grades nine through twelve, in New Haven, Connecticut. Our primary robotics education is focused around the *FIRST*® (For Inspiration and Recognition of Science and Technology) Robotic Competition (FRC) program and we are FRC® veteran team number 558 established in 2000. We were founded by two United Illuminating engineers, John Buffa and Jim Crowe.



The program places a strong emphasis on community outreach activities. These activities bring communities together as students, parents, teachers and mentors work in partnership to achieve a common goal: building a brighter future for our students. Although the design, construction and programming of a robot is the central activity, our overall goal is to build people, not robots.

We are an active organization that seeks to inspire students at every grade level, throughout the community. Our major outreach event is Elm City Robo Fest, a robotics tournament for grade-school children participating in the grammar school program, *FIRST* Lego League. We host the tournament at our high school and we introduce the children to our robotics program by demonstrating our robot and encouraging them to continue with robotics.

Elm City Robo Squad's program is award winning. We have received many *FIRST* awards including: Chairman's, Engineering Inspiration, Quality, Industrial Safety, Gracious Professionalism and Team Spirit Awards. We have also been the Connecticut State (CAS/CIAC) Robotics Champions for 2013, 2014 and 2016. In the 2015 season, we won the *FIRST* New England Region Chairman's Award which honored us for best representing a model for other teams to emulate and best embodying the purpose and goals of *FIRST* robotics.





FIRST® Vision: Dean Kamen¹, one of the founders of *FIRST*, is an inventor, entrepreneur, and tireless advocate for science and technology. His passion and determination to help young people discover the excitement and rewards of science and technology are the cornerstones of *FIRST*. Dean wanted "[t]o transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders."

Gracious Professionalism® is part of the ethos of *FIRST*. It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. With Gracious Professionalism, fierce competition and mutual gain are not separate notions. Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process. They avoid treating anyone like losers. No chest thumping tough talk, but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended. In the long run, Gracious Professionalism is part of pursuing a meaningful life. One can add to society and enjoy the satisfaction of knowing one has acted with integrity and sensitivity.

Coopertition® produces innovation. At *FIRST*, Coopertition® is displaying unqualified kindness and respect in the face of fierce competition. Coopertition® is founded on the concept and a philosophy that teams can and should help and cooperate with each other even as they compete. Coopertition® involves learning from teammates. It is teaching teammates. It is learning from mentors. And it is managing and being managed. Coopertition® means competing always, but assisting and enabling others when you can.

FIRST FRC® Program: *FIRST* Programs include *FIRST* Robotics Competition (FRC) for Grades 9-12 ages 14-18. *Elm City Robo Squad* is an FRC team. In 2016 *FIRST* Robotics Competition included 3,140 teams. 73,000+ high-school students (Grades 9-12), 56 Regional Events, 48 District Qualifying Competitions, 5 District Championships, and *FIRST* Robotics Competition Championship at the *FIRST* Championship in St. Louis, MO, April 2017.

FIRST is a volunteer-driven organization built on partnerships with individuals as well as businesses, educational institutions, and government. Some of the world's most respected companies provide funding, mentorship time and talent, and equipment to make *FIRST*'s mission a reality. There are over 39,000 committed and effective volunteers who are key to introducing 68,000+ high-school students to the joy of problem solving through engineering.

Since 1992, FRC (*FIRST* Robotics Competition) has challenged high school students, working with professional mentors to solve an engineering design problem in an intense and competitive way. The program is a life-changing, career-molding experience and it's a lot of fun.

For more information about *FIRST* and its competitions visit www.usfirst.org

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¹ Dean Kamen, the inventor of, among other things, the Segway scooter.



Elm City Robo Squad began in 2000 as part of a physics class at Hill Regional Career High School, an inner city, Title I, New Haven high school. A few years later, we became an after-school program using a basement workroom. In 2006, the team moved to a robotics room on the school's main floor. Since 2001 we have participated in *FIRST* (For Inspiration and Recognition of Science and Technology) robotics competitions where the team of about twenty-five students annually designs and builds a robot as part of a challenge. We began with only two engineers mentoring and now have twenty-two mentors. In seventeen years, we have influenced the lives of more than 400 ethnically diverse high school students. In New Haven, where 24% of students don't graduate, our students graduate and attend college and even receive scholarships.

Awards & Standings

2017 Awards STEAMWORKSSM

FIRST World Championship Finalist Archimedes Division, 11th Seed
FIRST World Championship – Gracious Professionalism Award
FIRST New England District Championship - Regional Chairman's Award
FIRST New England District Championship - Dean's List Finalist – Selma A.
FIRST Waterbury District Winner, Semifinalist
FIRST Waterbury District Entrepreneurship Award
 Waterbury NE District - Dean's List Semifinalist – Selma A.
FIRST Hartford District Winner
FIRST Hartford District Chairman's Award
 NE District Championship - Semifinalist)
 CAS/CIAC Connecticut State Championship – Winner, 14th Seed

2016 STRONGHOLDSM

FIRST World Championship Finalist Galileo Division, 8th Seed
FIRST New England District Championship – Team Spirit Award
FIRST Waterbury District Winner, 1st Seed
FIRST Waterbury District Quality Award
FIRST Hartford District Winner
FIRST Hartford District Chairman's Award
 CAS/CIAC Connecticut State Championship – Winner, 6th Seed
 Where Is Wolcott Invitational, Best Design Award
 Where Is Wolcott Invitational, High Scorer Award
 Bash at the Beach, Finalist

2015 RECYCLE RUSHSM

FIRST Championship Carson Division Semifinalist
FIRST Championship Carson Division, Safety Star of the Day
FIRST New England Regional Chairman's Award
FIRST Rhode Island District Chairman's Award
FIRST Waterbury District Finalist
FIRST Waterbury District Team Spirit Award
 Where Is Wolcott Invitational, Best Design Award

2014 AERIAL ASSISTSM

FIRST Championship Galileo Division Semifinalist
FIRST New England Regional Finalist, 3rd Seed
FIRST New England Regional Judges Award
FIRST Hartford District Winner, 1st Seed
FIRST Southington District Chairman's Award
FIRST Southington District Winner, 11th Seed
FIRST Southington District Industrial Safety Award
FIRST Groton District Industrial Safety Award
FIRST Groton District 12th Seed
 CAS/CIAC Connecticut State Championship – Winner, 1st Seed
 Where Is Wolcott Invitational, Finalist & Best Design Award

2013 ULTIMATE ASCENTSM

CAS/CIAC Connecticut State Championship – Winner, 1st Seed
FIRST WPI Regional Semifinalist, 4th Seed
FIRST WPI Regional Creativity Award
FIRST WPI Regional, Safety Star of the Day
 Where Is Wolcott Invitational, Finalist

2012 REBOUND RUMBLESM

FIRST WPI Regional Quarterfinalist, 15th Seed
FIRST Connecticut Regional Finalist, 10th Seed
 Where Is Wolcott Invitational, Finalist

2011 LOGO MOTIONTM

FIRST Connecticut Regional Quarterfinalist, 17th Seed
FIRST Connecticut Regional Dean's List Finalist (Rohit Grover)

2010 BREAKAWAY[®]

FIRST Championship Newton Division, Ranked 38th/87
FIRST Connecticut Regional Quarterfinalist
FIRST Connecticut Regional Engineering Inspiration Award

2009 LUNACY[®]

FIRST Championship Archimedes Division, Ranked 39th/87
FIRST Connecticut Regional Judges' Award

2008 FIRST OVERDRIVETM

FIRST Connecticut Regional Gracious Professionalism Award
FIRST Connecticut Regional Woodie Flowers Finalist Award awarded to Mentor Ernie Smoker
FIRST Connecticut Regional Safety Token Award, Runner Up

2007 RACK 'N' ROLLTM

FIRST Championship Curie Division, Quarterfinalist, Ranked 36th/86
FIRST Connecticut Regional, Winner, 25th Seed
FIRST Connecticut Regional Team Spirit Award
 Bash at the Beach, Best Human Player Award & Most Photogenic Award

2006 AIM HIGHTM and 2005 TRIPLE PLAYTM

2006 *FIRST* New England Regional, 13th Seed
 2006 *FIRST* New England Regional Imagery Award
 2005 *FIRST* New England Regional, Finalist, 22nd Seed





Interested in becoming a sponsor?

Help us to inspire the next generation of scientists, engineers and caring citizens! The Elm City Robo Squad Program is seeking your financial help in sustaining a program that is proven to motivate young men and women to achieve their dreams. Your financial contribution will help us to continue this important work! Please consider contributing to the Elm City Robo Squad program. Help us to build a brighter future for our students. Becoming a sponsor is easy! Whether it's a monetary donation, extra tools or supplies, or just simply a helping hand, we would be happy to hear from you. Please contact us at:

Elm City Robo Squad
Hill Regional Career High School
140 Legion Avenue
New Haven, CT 06519

Alberta Vitale, Mentor/Steering Committee Member
Phone: 203-693-1558
email: elmcityrobosquad@gmail.com
www.elmcityrobosquad.org

Sponsorship Levels

Elm City Robo Squad has many levels of sponsorship (outlined below). Please consider joining the ranks of our corporate sponsors Yale University, United Illuminating, United Technologies, Best Buy Foundation, Comcast NBCUniversal, Hill Regional Career High School, Parker Hannifin Corporation, National Instruments, Walmart Foundation, Svigals + Partners, Frederick A. DeLuca Foundation and Community Foundation for Greater New Haven, at one of the following levels:

Platinum Sponsor

Donates \$5000+ to our team. A founding sponsor or donation of \$5000+ to our team. All Platinum Sponsors will have all the perks of a Gold Sponsor, with the addition of having their company logo appear prominently on our website, robots, team shirts, pit banners, and other team materials, as well as included in the official team name, and announced when the team is introduced or receives awards.

Gold Sponsor

Donates \$2000-\$4999 to our team. All Gold Sponsors will have all the perks of a Silver Sponsor, with the addition of having their company logo appear on both our robot and on our team shirts.

Silver Sponsor

Donates \$500-\$1999 to our team. All Silver Sponsors will have all the perks of a Bronze Sponsor, with the addition of having their company name appear on our robot.

Bronze Sponsor

Donates \$100-\$499 to our team. All Bronze Sponsors will be listed on the sponsors' page on our website and in our pit display.



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Our Current Mentors

Cynthia Scheetz
Ernest Smoker
Clifford Branzell
Justin Foss
Andrew Morrison
Alan DiCicco
Makenna Calabrese
Donald Thomas

Alberta Vitale
Steven Reitsma
Sam Lipscomb
Gabe Lapietra
Brendan Clifford
Bill Mendoza
Josh Miller
Emily Chu

Richard Vogl
Peggy Thomas
Kris Seluga
Eric Scheuing
Vishal Patel
Eric Sheuing
Ben Taylor



About Mentoring and Volunteering

We welcome new engineering mentors to help guide our students to design and build robots. And new non-engineering mentors are welcome to teach associated business skills to our students, including fundraising, marketing and branding. We also welcome volunteers that can provide lunches and dinners to us during our long evening and Saturday work sessions. Our volunteer hours are flexible. Some volunteer several evenings a week, others a couple times a month. No amount is too small. During our robotics build season, January through April, our typical schedule is:

Monday 3pm - 8pm
Tuesday 3pm - 8pm
Wednesday 3pm - 8pm

Thursday 3pm - 8pm
Friday 3pm - 8pm
Saturday 8am - 4pm



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The Design and Build Experience

Each year we build a robot. We receive a new unique challenge from FIRST and we have six weeks to build a robot according to the challenge. Six weeks of high intensity work with a hard stop. Planning and thinking. Assigning tasks. Applying formulas and knowledge. Arguing and collaborating. Trusting and challenging one another. Trial and error. Success and failure. Experiential learning.

The challenge begins in January with the build ending in mid-February. Competitions begin about a week later. Re-engineering and redesign in a time-limited format follows through the 8-week competition season that culminates at World Championship in April. Most recently, Elm City Robo Squad attended *FIRST* World Championship in April 2014, 2015 and 2016 in St. Louis, Missouri, finishing as a semifinalist in its division in 2014 and 2015, and as finalists in 2016.



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