

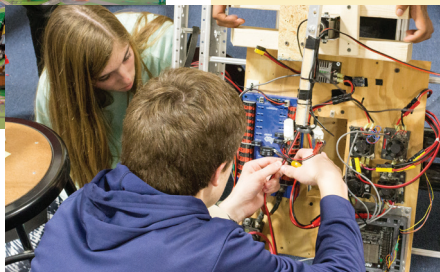
ENGAGE



For Inspiration and Recognition of Science and Technology

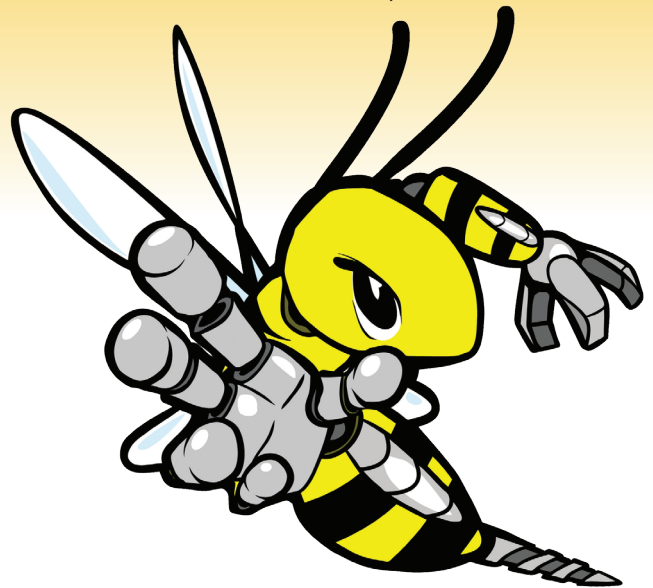
FIRST® was founded in 1989 by inventor and engineer Dean Kamen. *FIRST* was developed to help inspire students to pursue educations and careers in the STEM (Science, Technology, Engineering and Math) fields. *FIRST* strives for a culture where scientists and engineers are just as much of a role model to young adults as musicians, actors and sports figures.

These goals are accomplished by showing students that STEM education is not merely dry memorization from a textbook, but instead a dynamic and engaging learning process. The challenges that students face as part of a *FIRST* program mirror those they will see while in the workplace. Through the four different robotics programs (Jr. FLL, FLL, FTC, FRC) *FIRST* teaches students about time/budget management, working with others, and the importance of putting effort into a project.



Mission

The *FIRST* mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.



The RoboBees



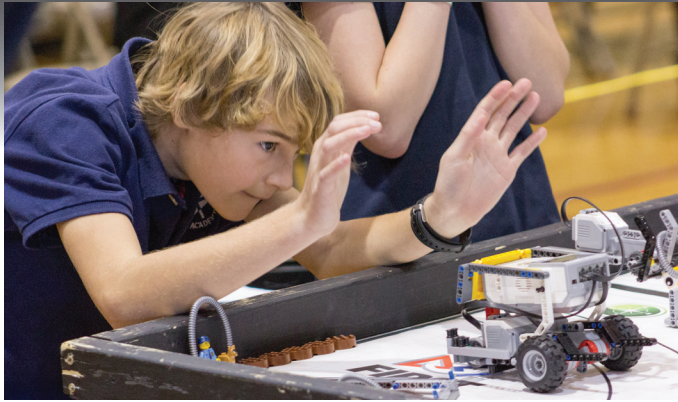
Our Team

A growing **STEMS** flagship program is The RoboBees, *FIRST* Team 836, a robotics team located in St. Mary's County, Maryland. The RoboBees were created in 2001 by Mr. David Buddenbohn, a teacher at the Dr. James A. Forrest Career and Technology Center. Since then, we have grown into an incredibly diverse and unique student body which comes from six different schools as well as home-schooled students. Being located near PAX River Naval Air Station, engineering permeates our local culture. Our mentor base is comprised of engineers, scientists, and mathematicians who work for local defense contractors or PAX itself. During the Research and Development phase each year, new Bees go through comprehensive courses designed to teach them about *FIRST*, our team history, safety and other important topics. We train our students to "bee the best they can bee."

FIRST® Vision

“To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders.”

Dean Kamen, Founder - FIRST® Robotics



FLL Jr & FLL - FIRST® LEGO League

FLL Jr students, K-3rd grade, build models using LEGO® Education WeDo 2.0 and create Show Me posters to present what they learned. The program focuses on building interest in STEM through a real-world challenge – to be solved by research, critical thinking, and imagination.

FLL uses LEGO®-based robots to develop solutions to research projects. Our FLL teams are geared toward students in grades 4 through 6, or ages 9-12. They learn to create innovative solutions for challenges facing today's scientists as part of their research project.

FTC - FIRST® Tech Challenge

FTC is the next step of the FIRST robotics program, geared towards students grades 7-12, ages 12-18. The same principles behind the program are still in place, just the medium for design has changed. Moving away from LEGO®-based robots, FTC students use specially designed building materials. Working on these teams helps develop problem-solving, organizational, and team-building skills.

FRC - FIRST® Robotics Challenge

FRC combines the excitement of sports with the rigors of science and technology. These students, grades 9-12, ages 14-18, work together under strict guidelines, resources, and time limits to develop a working robot to compete against the world. With only 6 weeks to design, build, and test their robot, it's as close to “real world” engineering that a student can get.



Awards

The RoboBees have won 38 different awards in total, including Chairman's Awards, Engineering Inspiration Awards, and Event Winners! Below is the team's award history:

- 2019** FIRST Chesapeake District Championship *Autonomous Award sponsored by Ford*
- 2019** CHS District Oxon Hill MD Event *Autonomous Award sponsored by Ford*
- 2019** CHS District Owings Mills MD Event sponsored by Leidos *District Event Winner*
- 2018** FIRST Chesapeake District Championship *Industrial Design Award sponsored by General Motors*
- 2018** CHS District Central Virginia Event sponsored by Dominion Energy *Innovation in Control Award sponsored by Rockwell Automation*
- 2018** CHS District Central Maryland Event sponsored by Leidos *District Event Finalist Excellence in Engineering Award sponsored by Delphi*
- 2017** FIRST Chesapeake District Championship sponsored by Booz Allen Hamilton *Entrepreneurship Award sponsored by Kleiner Perkins Caufield and Byers*
- 2017** CHS District - Northern Maryland Event *District Engineering Inspiration Award*
- 2016** FIRST Chesapeake District Championship sponsored by Booz Allen Hamilton *District Championship Winner, FIRST Championship District Points Qualifying Team*
- 2016** CHS District - Central Maryland Event *District Engineering Inspiration Award District Event Winner*
- 2016** CHS District - Greater DC Event *District Event Winner, Creativity Award sponsored by Xerox*
- 2015** Chesapeake Regional *Regional Finalists, Creativity Award sponsored by Xerox*
- 2014** Greater Pittsburgh Regional *Regional Winners, Engineering Inspiration Award*
- 2014** North Carolina Regional *Quality Award sponsored by Motorola, Regional Finalists*
- 2013** Palmetto Regional *Entrepreneurship Award sponsored by Kleiner Perkins Caufield and Byers, Regional Finalists, Regional Chairman's Award*
- 2013** Washington DC Regional *Engineering Excellence Award sponsored by Delphi*
- 2012** Washington DC Regional *Quality Award sponsored by Motorola Regional Finalists*
- 2012** Chesapeake Regional *Website Award, Regional Chairman's Award*
- 2011** Chesapeake Regional *Regional Chairman's Award, Regional Finalists*
- 2010** Chesapeake Regional *Team Spirit Award sponsored by Chrysler*
- 2008** Chesapeake Regional *Motorola Quality Award*
- 2007** Chesapeake Regional *Judges' Award*
- 2005** Chesapeake Regional *RadioShack Innovation in Control Award*
- 2003** Chesapeake Regional *Leadership in Controls Award*
- 2002** Chesapeake Regional *Incredible Play Award*

BY THE NUMBERS

COMMITMENT

19 YEARS!

OUTREACH EVENTS

25 Events in 2019

325+ Events Since 2011

1,500 Service Hours in 2019

15,500+ Service Hours Since 2011

FURTHEST OUTREACH EVENT:

820 Mile Round Trip - Rippling Water, WV

THE "STEM CYCLE"

161 Total Graduates (40 in last 4 years)

90% Pursue STEM Degrees

45+ with Local STEM Careers

30+ Student Internships with Sponsors

9 Alumni are Mentors

6 Joined the Military in a Technical Field

HOURS WORKED THIS YEAR:

10,060 Mentor Volunteer Hours

BUDGET:

\$85,000 Total

\$40,000 for STEM Center

\$7,000 for FLL Jr, FLL, and FTC

THE STACHELCZYK STEM CENTER:

3700 Square Feet of Dedicated Space

12 In-House Teams

Public Events Include: STEM Days, Game, Nights, Team Training Sessions, FTC Practice, Girl Scouts Merit Badge Day, Off-Season Events and More

FTC/FLL QUALIFIER:

25+ Teams (FLL and FTC)

300+ Students and Spectators

An independent study conducted by Brandeis University found students who participate in *FIRST*® programs are...

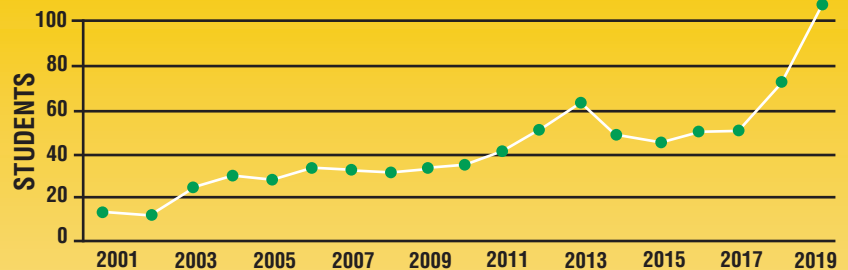
3X more likely than other students to pursue a degree in engineering

Significantly more likely to pursue a post-graduate degree

2X more likely to do volunteer work in their community

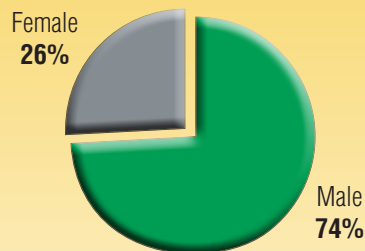
... carrying their commitment to projects through their college years and the rest of their lives

Students in the Program

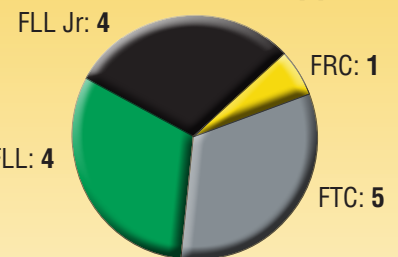


* In 2015, the program transitioned from school-based to community-based

Male to Female

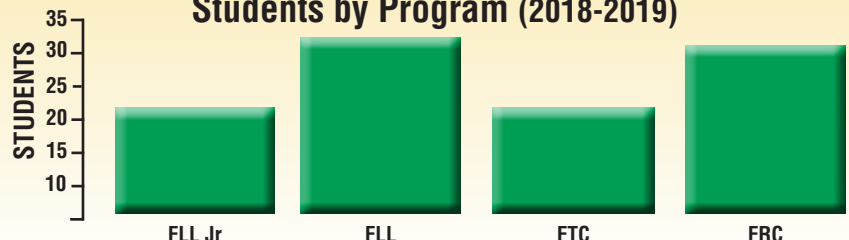


Team Financial Support

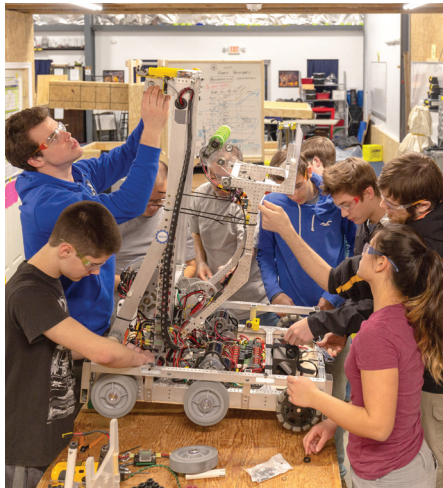


*FLL Jr- *FIRST* Lego® League Jr, FRC- *FIRST* Robotics Competition
FTC- *FIRST* Tech Challenge, FLL- *FIRST* Lego® League

Students by Program (2018-2019)



ACTIVITIES	TOTAL HOURS 2019
Hollywood Elementary School Book Fair	45
Sea Air and Space	84
Friends of the Library Book Pack-Up	24
FLL Rocket Launch	3
Open House	85
River Concert Series STEM Booth (6 Events)	168
Home School Open House	40
Summer Camp	360
Development Training Event	36
St. Mary's County Fair	48
Blessing of the Fleet (2 Days)	90
Oyster Festival	80
SOMD STEM Festival	48
Girls Who Code	28
Girls Scout Badge Day	60
SOMD FLL/FTC Qualifier	300
Girl Scout Night	8
WVU FTC Kickoff	16
SOMD FTC Kickoff	24
PEO U&W Day	40
TOTAL	1587



OUR SPONSORS

INVESTMENT

Without the help of these local organizations none of the this would be possible. Sponsors are assigned to the sponsorship levels shown below based on their assistance to organization. This assistance can come in the form of a monetary donation, in house services, parts/material donation, etc.

Diamond Sponsors

BAE SYSTEMS

Department of Defense
DoDSTEM
Science • Technology • Engineering • Mathematics

**BEST
BUY**
FOUNDATION

**STACHELCZYK
SHEMETA TEAM**
OF CENTURY 21 NEW MILLENNIUM



ECHO
NORTHROP GRUMMAN

Platinum Sponsors

BOEING

Gold Sponsors



PLANAR
A LEYARD Company

MIL
corp.

designpoint

PNC BANK

Silver Sponsors

**PATUXENT
DENTAL**

SMECO
Southern Maryland Electric Cooperative



ASI
Andromeda
SYSTEMS
INCORPORATED

Smartronix

ETTE
Empowerment through Technology & Education

Bronze Sponsors

SOLIDWORKS

GitHub

Support our mission and STEM awareness, become a sponsor today!

Donations can come in the form of monetary assistance, material donation, and others. Levels are on an annual basis.

Sponsorship Levels

Diamond Sponsors

Sponsors who donate \$4,000 and above. *Perks Include:*

Name / logo on our website in a prominent location

Name / logo in a prominent location on our competition FRC / FTC robots

Name / logo displayed in prominent location in our competition pit

Official recognition in team name announced at competition

Sponsor Gift

Robot demonstration at corporate event/outing (upon request)

Platinum Sponsors

Sponsors who donate between \$2,500 and \$3,999 *Perks Include:*

Name / logo on our website

Name / logo on our competition FRC / FTC robots

Name / logo displayed in our competition pit

Sponsor Gift

Gold Sponsors

Sponsors who donate between \$1,000 and \$2,499. *Perks Include:*

Name / logo on our website

Name / logo displayed in our competition pit

Sponsor Gift

Silver Sponsors

Sponsors who donate between \$500 and \$999. *Perks Include:*

Name and/or logo on our website

Sponsor Gift

Bronze: In-Kind Sponsors

Sponsors who donate in-kind services to support our organization.

Perks Include: Name and/or logo on our website

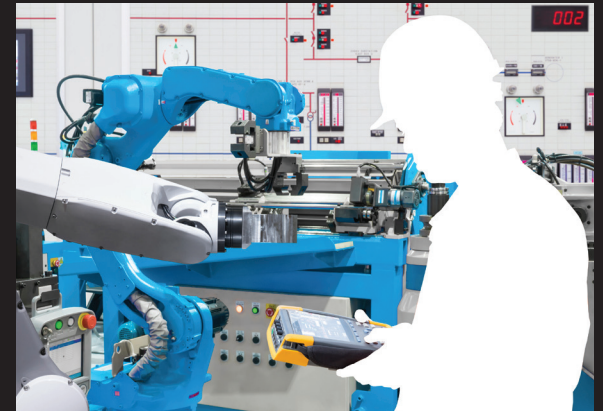
** Perks apply to teams geographically located near donor organization*

To sponsor **growingSTEMS**, please contact:

info@growingstems.org



TOMORROW'S TECHNOLOGY LEADERS



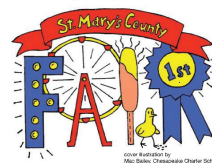
ARE HERE TODAY



COMMUNITY

OUTREACH

growingSTEMS and The RoboBees have always been extensively engaged in our community. We have participated in the American Cancer Society Relay for Life, Pax River Air Expo, St. Mary's County Fair, the U.S. National Oyster Festival, Blue Crabs games, various food drives, and many other community service events. The organization is made up of a dynamic team of people constantly seeking outreach opportunities, including government advocacy for STEM education at the local, state, and national levels. These events and activities allow us to introduce STEM topics and *FIRST®* Robotics to our community. Support of STEM fields has grown significantly in Southern Maryland as we now have over 50 different robotics teams and engineering classes in our schools.



Impactful programs and innovative methods to spread the *FIRST®* message

We were the start of the STEM wave in Southern MD. We began by starting many of the robotics teams in the area. Over the years, we have utilized music, video, stories and the arts to spread STEM throughout the community. Examples include activity booths at local festivals, community open houses, and visiting elementary / middle schools to spread the spirit of STEM. In 2012, we started creating a series of children's books that focus on STEM, and we have translated those books into 5 different languages and made them available on our website.



Our Partnerships

growingSTEMS and The RoboBees have a great hive of partners that help us grow and spread the word of *FIRST*®. Between schools, other *FIRST*® teams, and our sponsors we are very involved in developing our community connections.

FRC - *FIRST*® Robotics Challenge

***FIRST* Team 4514 - Terminatrix**

Huntingtown High School - Huntingtown, MD.

***FIRST* Team 3650 - The Robo Raptors**

North Point High School - Pomfret, MD.

***FIRST* Team 1629 - GaCo (Garrett County Coalition)**

Garrett County Public Schools - Accident, MD

***FIRST* Team 2199 - Robo-Lions**

Community Program - Finksburg, MD

***FIRST* Team 5587 - Titan Robotics**

TC Williams High School - Alexandria, VA

FTC - *FIRST*® Tech Challenge

***FIRST* Team 389 - The Swarm**

growingSTEMS, Hollywood, MD

***FIRST* Team 390 - The Stingers**

growingSTEMS, Hollywood, MD

***FIRST* Team 13515 - Nerdz**

East Hardy High School - Hardy, WV

***FIRST* Team 15116 - Nuclear Nerdz**

East Hardy High School - Hardy, WV

***FIRST* Team 4218 - The Late Knights**

St. Mary's Ryken - Leonardtown, MD

***FIRST* Team 8879 - Bot Brigade Quantum**

Community Program - California, MD

***FIRST* Team 11534 - Bot Brigade Quartic**

Community Program - California, MD

Local Schools

Dr. James A. Forrest Career and Technology Center

Lexington Park Elementary School

Chesapeake Public Charter School

Oakville Elementary School

Piney Point Elementary School

Lettie Dent Elementary School

Captain Walter Francis Duke Elementary School

Hollywood Elementary School

Lexington Park Stem Academy

Esperanza Middle School

Leonardtwn Middle School

Leonardtwn High School

Great Mills High School

Chopticon High School

St. Mary's Ryken

College of Southern Maryland

St. Mary's College of Maryland

CONTRIBUTE

SUPPORT

Donate

growingSTEMS is a Non-Profit, volunteer-run organization that aims to raise awareness for STEM education. The RoboBees participation in *FIRST*® Robotics Competitions, support of other local STEM teams, and holding community outreach events are all dependent on donations from our sponsors and private citizens alike.

If you would like to make a tax-deductible donation, the easiest way is through the growingSTEMS - PayPal Giving Fund. You can find the link on our website or use the PayPal link below.



growingstems.org

paypal.com/us/fundraiser/charity/1492863

For alternatives to PayPal, please e-mail us at:
info@growingstems.org



Wishlist

We also have a Wishlist of items that would be extremely helpful in supporting this program. The organization is always in need of more supplies, materials, tools, and other aid to help keep the program running smoothly. You can find a prioritized list of needed items on The RoboBees' website:

robobees.org

To prevent duplicate purchases, if you plan on purchasing items off this list, or if you have any questions, please contact us at:

Team836@RoboBees.org



Item	Price	Priority
Arduino Uno	\$12.00	High
RoboBee	\$15.00	High
...

Amazon Partnership

You can help support our organization through Amazon. Visit Amazon using our AmazonSmile link and shop like you normally would! Amazon donates 0.5% of the price of your eligible AmazonSmile purchases to **growingSTEMS/RoboBees**.



AmazonSmile is the same Amazon you know. Same products, same prices, same service.

Using the Robobees link is an easy one-step process. Using our sponsored link for every visit to Amazon provides an additional stream of funding that's as easy as going shopping! Bookmark our link for convenient access.

robobees.org or smile.amazon.com



Volunteer



Volunteers are essential to the efforts of our organization. We would not exist without individuals willing to donate their time. Part of being a great volunteer is loving what you're doing. Consider volunteering to help staff an event.

Both technical and non-technical skills are welcome and a robotics background is not required.

For volunteer information, contact us: info@growingstems.org

Real Estate Referrals

The Stachelczyk Shemeta Team of Century 21 New Millennium will donate \$500 to the organization for real estate referrals from **growingSTEMS/RoboBees** members, friends and family that result in a successful sales transaction. \$1000 will be donated for the successful sale or purchase of a home by a program mentor.

Visit stacshemeteam.com or e-mail stacshemeteam@c21nm.com

