

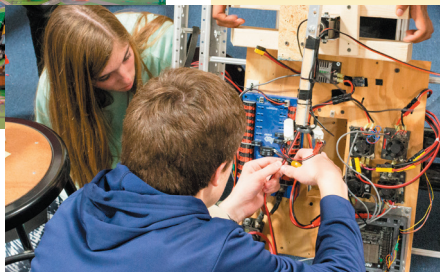
# ENGAGE



## *For Inspiration and Recognition of Science and Technology*

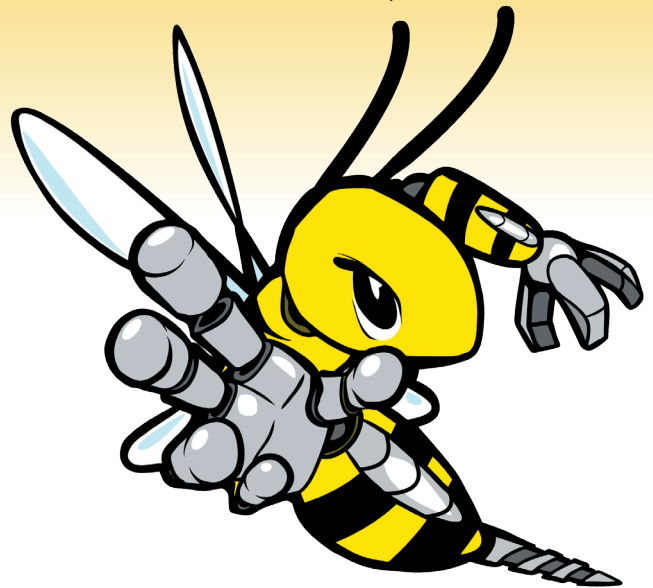
*FIRST*® was founded in 1989 by inventor and engineer Dean Kamen. *FIRST* was developed to help inspire students to pursue educations and careers in the STEM (Science, Technology, Engineering and Math) fields. *FIRST* strives for a culture where scientists and engineers are just as much of a role model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

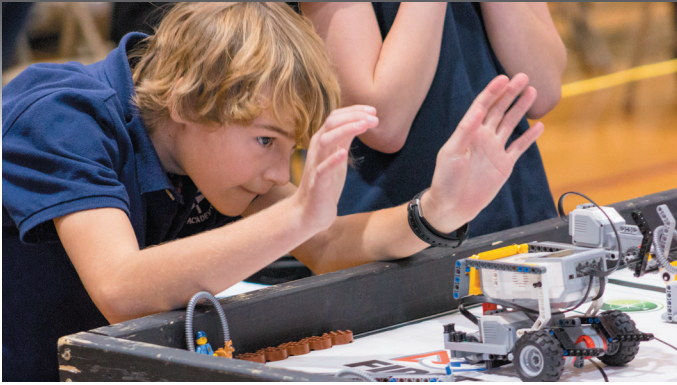


### Our Team

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.”



### **FLL - FIRST® LEGO League**

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.



*Dean Kamen, Founder - FIRST® Robotics*

## **Awards**

The RoboBees have won 35 different awards in total, including Chairman's Awards, Engineering Inspiration Awards, and Event Winners! Below is the team's award history:

- 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

## 18 YEARS!

### OUTREACH EVENTS

25 Events in 2018

300+ Events Since 2011

1,500 Service Hours in 2018

14,000+ Service Hours Since 2011

### FURTHEST OUTREACH EVENT:

820 Mile Round Trip - Rippling Water, WV

### THE "STEM CYCLE"

158 Total Graduates (45 in last 4 years)

95% Pursue STEM Degrees or Tech School

43+ with Local STEM Careers

28+ Student Internships with Sponsors

9 Alumni are Mentors

6 Joined the Military in a Technical Field

### HOURS WORKED THIS YEAR:

8,003 Mentor Volunteer Hours

### BUDGET:

\$85,000 Total

\$40,000 for STEM Center

\$7,000 for FLL, FTC and DI

### THE STACHELCZYK STEM CENTER:

3700 Square Feet of Dedicated Space

7 In-House Teams

Public Events Include: STEM Days, Game, Nights, Team Training Sessions, FTC Practice, Off-Season Events and More

### FTC/FLL QUALIFIER:

25+ Teams (FLL and FTC)

300+ Students and Spectators

### SERVICE (LAST 4 YEARS):

10+ Tons of Food Collected for Food Bank

15 Operation Christmas Child Shoe Boxes

50+ Toys Collected for Toys for Tots

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

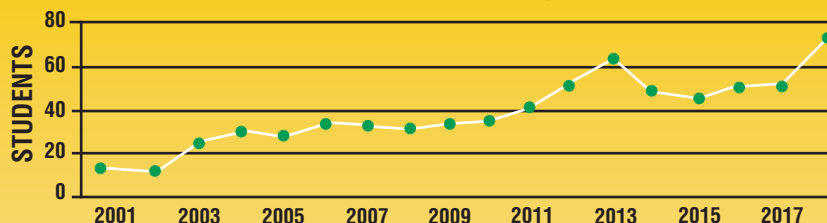
**3X** more likely than other students to pursue a degree in engineering

**Significantly** more likely to pursue a post-graduate degree

**2X** more likely to do volunteer work in their community

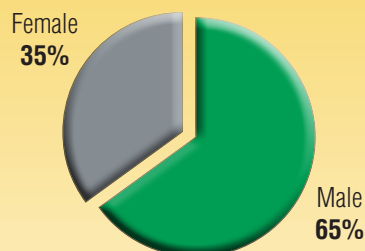
... carrying their commitment to projects through their college years and the rest of their lives

### Students in the Program

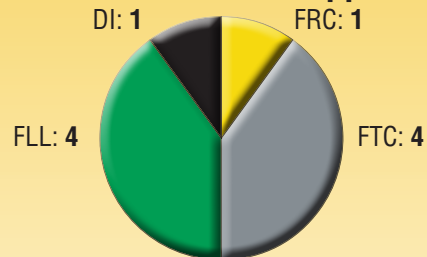


\* In 2015, the program transitioned from school-based to community-based

### Male to Female

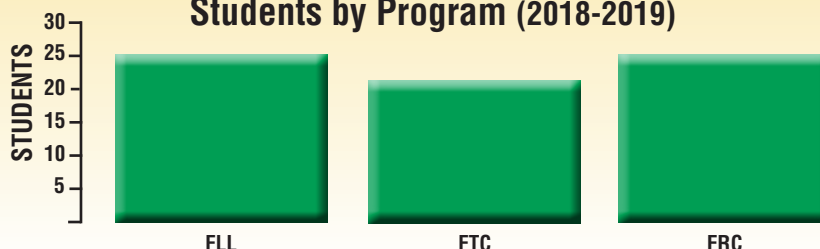


### Team Financial Support



\*DI- Destination Imagination, FRC- *FIRST* Robotics Competition, FTC- *FIRST* Tech Challenge, FLL- *FIRST* Lego® League

### Students by Program (2018-2019)





ACTIVITIES	TOTAL HOURS 2013-2018
Friends of the Library Book Pack Up	150
PEO U&W Industry Day	50
growingSTEMS Open House	400
Pax River NAS Air Show	220
Drone X Races	180
River Concert Series STEM Booth (6 Events)	1600
Rotary Presentations	20
FRC Training Sessions	350
YPO Demonstration	25
Leonardtown Beach Party	55
St. Mary's County Fair	450
Kids Expo	15
US Oyster Festival Day	750
Naval Air Museum STEM Days	80
FTC/FLL Qualifier	1200
Elementary School Visits	250
Library STEM Lessons	300
Food Drives	300
<b>TOTAL</b>	<b>6,395</b>



## 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.

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### Diamond Sponsors

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The logo for BAE SYSTEMS, featuring the text "BAE SYSTEMS" in white capital letters on a red rectangular background.

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### Platinum Sponsors

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### Gold Sponsors

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**YOUR NAME HERE**

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### Silver Sponsors

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**YOUR NAME HERE**

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### Bronze Sponsors

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# 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*

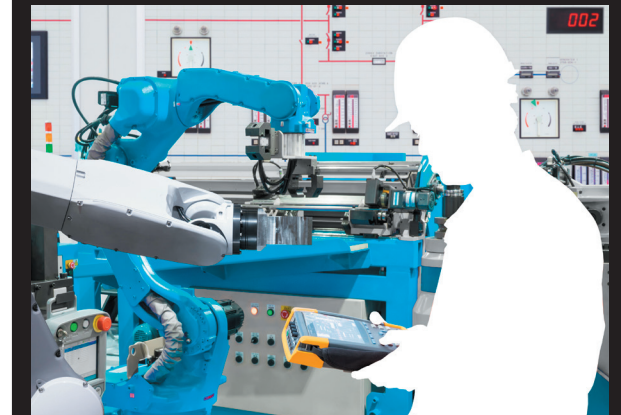
*\* Perks apply to teams geographically located near donor organization*

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](http://growingstems.org)

[paypal.com/us/fundraiser/charity/1492863](https://paypal.com/us/fundraiser/charity/1492863)

For alternatives to PayPal, please e-mail us at:  
[info@growingstems.org](mailto: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](http://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](mailto:Team836@RoboBees.org)



## Amazon Partnership

The RoboBees are registered in the Amazon Associates program, allowing the team to earn a percentage of all sales made through a RoboBees sponsored Amazon link. Prices for all items are unaffected through this program. It is not a discount program and there is no extra cost, Amazon simply donates a portion of their profit to our organization.



Using the Robobees link is an easy one-step process that helps generate money just by purchasing items from Amazon, including Kindle books and MP3's.

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](http://robobees.org) or [smile.amazon.com](http://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](mailto: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 [stacshemteam.com](http://stacshemteam.com) or e-mail [stacshemteam@c21nm.com](mailto:stacshemteam@c21nm.com)

