

# PROPOSAL COVER SHEET

Name of applicant: **Allegany County Public Schools**

Title of project: **Middle School Robotics Program**

Contact person: [REDACTED]

Address: [REDACTED]

Phone: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

Project partners: **REACT (Robotics Engineering Allegany County - Together)**

Amount requested: **\$12,525.00**

Project statement (100 words limit)

Allegany County Public Schools would like to increase the number of middle school robotics programs from one school to all four middle schools. We have approximately 60% economically disadvantaged students in our county. Reaching all middle schools is key to increasing the number of students ready to enter the Science, Technology, Engineering, and Math (STEM) workforce. The robotics program will follow the First Lego League (FLL) competition guidelines, incorporate Environmental Literacy and Next Generation Science Standards during the 115-day after school program and will partner with the non-profit group REACT (Robotics, Engineering, Allegany County -together).

[REDACTED]  
\_\_\_\_\_  
Signature of Local Superintendent of Schools/Head of Grantee Agency

August 3, 2017  
Date

# PROJECT ABSTRACT

Allegany County Public Schools is located in rural Western Maryland where demographics have declined over recent years. With declining population comes declining enrollment and declining per pupil funding. This county has a median income of would like to implement a system wide robotics program to expose and impact more students to STEM disciplines. We currently have a median percentage of 60% economically disadvantaged students for the county. During the 2016-2017 school year we had 1 elementary, 1 middle school and 1 high school with an active robotics program which culminated in students attending a competition. The problem is this only represents a small part of the county. With the increasing need and focus to have a STEM ready workforce, we would like to increase program access to more students in more schools. We would like to increase the number of programs to 8 for the 2017-2018 school year. This would allow for the incorporation of all 4 middle schools in the county plus add 2 elementary schools. This grant would support the equipment and staffing needs for the implementation at the middle school level. A local nonprofit group REACT (Robotics Engineering Allegany County - Together) will supply mentoring support to the teachers, coaching staff, and students at all levels - elementary, middle, and high. By creating programs at all 4 middle schools we are able to reach the whole county and have a greater impact by exposing disadvantages students to the possibilities that exist in the 21st Century workforce, both in and out of Allegany County. The robotics program will be incorporated into the afterschool program and also part of the co-curricular block. At the middle school level, the students will be using the competition and community project guidelines of the First Lego League (FLL) and the theme Hydro Dynamics. We feel it is important for the students to not only gain the robotics and engineering skills but also incorporate those skills into real world problems and solutions. Which is why we are using the FLL guidelines and theme in conjunction with environmental literacy for a yearlong program. This program is an imperative support mechanism that can substantially increase academic achievement, creativity, and future opportunities for at-risk students in Allegany County.

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#### 4. Project Narrative.

##### 4.1. Extent of Need.

There continues to be an achievement gap in reading, math, and science between FARMS and Non-FARMS in the middle schools as identified by assessment data. The performance of the FARMS subgroup is not always consistent, and there is a need for additional interventions beyond the regular school day to close the gap and to enable students to meet grade level expectations on county benchmarks and statewide assessments. “Research shows that participating in high quality Out of School Time programs helps increase engagement in learning and improves school day attendance.” (MOST, 2018-2017)

Allegany County is a rural area with limited employment opportunities. With an unemployment rate in January 2017 of 7.1% (DLLR, 2017), there is limited workforce potential in the area, thus limiting the exposure students have to robotics and engineering career fields across the county. Additionally, the United States Census Bureau ranks Cumberland as the poorest city in Maryland (Larry, 2015).

Our program goal is to provide a robotics program in ACPS middle schools as part of the after school program that engages students in their community, engages them in their learning, increases student achievement, and improves student attendance. We currently have 3 robotics clubs in the county, one in an elementary school, one in a middle school, and one in a high school. We have had other robotics clubs in the past however, due to lack of support and no funding availability with the robotics and engineering components they were not able to sustain the program. REACT (Robotics Engineering Allegany County -Together) nonprofit group has agreed to partner with ACPS to mentor the current and new programs, to assist in sustaining the current and new programs and to provide training for current and new teachers/coaches.

Trend data retrieved from the 2106 Maryland Report Card shows the FARMS population in the Allegany County middle schools continues to increase.

FARMS POPULATION	2016 PERCENT	2016 # OF STUDENTS	2015 PERCENT	2015 # OF STUDENTS	2014 PERCENT	2014 # OF STUDENTS
School 1						
School 2						
School 3						
School 4						
TOTAL FARMS						

Trends in 5th grade Science MSA scores have been fairly consistent for the last three years with around 75% of students at the Proficient/Advanced levels.

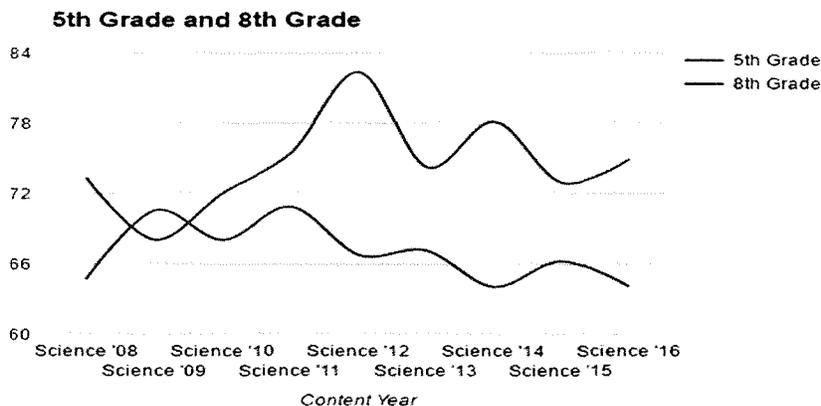
Maryland School Assessment Performance Results - Science for Grade 5									
Student Group	All Students								
	2016			2015			2014		
	# Tested	# Prof.	% Prof.	# Tested	# Prof.	% Prof.	# Tested	# Prof.	% Prof.
All Students	■	■	■	■	■	■	■	■	■
American Indian or Alaska Native	■	■	■	■	■	■	■	■	■
Asian	■	■	■	■	■	■	■	■	■
Black or African American	■	■	■	■	■	■	■	■	■
Hispanic/Latino of any race	■	■	■	■	■	■	■	■	■
Native Hawaiian or Other Pacific Islander	■	■	■	■	■	■	■	■	■
White	■	■	■	■	■	■	■	■	■
Two or more races	■	■	■	■	■	■	■	■	■
Special Education	■	■	■	■	■	■	■	■	■
Limited English Proficient (LEP)	■	■	■	■	■	■	■	■	■
Free/Reduced Meals (FARMS)	■	■	■	■	■	■	■	■	■

Data retrieved from mdreportcard.org

Trends in 8th grade Science MSA scores have been fairly consistent for the last three years with around 65% of students at the Proficient/Advanced levels.

Maryland School Assessment Performance Results - Science for Grade 8									
Student Group	All Students								
	2016			2015			2014		
	# Tested	# Prof.	% Prof.	# Tested	# Prof.	% Prof.	# Tested	# Prof.	% Prof.
All Students	■	■	■	■	■	■	■	■	■
American Indian or Alaska Native	■	■	■	■	■	■	■	■	■
Asian	■	■	■	■	■	■	■	■	■
Black or African American	■	■	■	■	■	■	■	■	■
Hispanic/Latino of any race	■	■	■	■	■	■	■	■	■
Native Hawaiian or Other Pacific Islander	■	■	■	■	■	■	■	■	■
White	■	■	■	■	■	■	■	■	■
Two or more races	■	■	■	■	■	■	■	■	■
Special Education	■	■	■	■	■	■	■	■	■
Limited English Proficient (LEP)	■	■	■	■	■	■	■	■	■
Free/Reduced Meals (FARMS)	■	■	■	■	■	■	■	■	■

Data retrieved from mdreportcard.org



Review of trend data in Science MSA scores over the past 9 years shows a contrasting picture. The 5th grade MSA scores have increased and the 8th grade MSA scores have decreased fairly steadily. Part of reason for this is that science in the middle school is taught for half of the school year. The grant opportunity will allow us to further enrich the school day instruction with more time used for Science and Environmental Literacy.

Trend data retrieved from District Performance Level Summaries shows the FARMS group achieving performance levels of 1 and 2 consistently in grade 6, 7, and 8 on both the 2015 and 2016 PARCC Assessments as compared to the NON-FARMS group who mainly achieved performance level scores of 3 and 4. Approval and participation in this grant opportunity will provide targeted instructional time for the FARMS population. The additional time will be aligned with the current instruction within the school day. The after school group sizes will be smaller than the 28 students per class during the school day. The smaller groups will allow for more direct, guided, and individualized instruction for the students.

MATHEMATICS, GRADE 6 ASSESSMENT SPRING 2016 BY %						MATHEMATICS, GRADE 6 ASSESSMENT SPRING 2015 BY %					
LEVEL	1	2	3	4	5	LEVEL	1	2	3	4	5
School 1	■	■	■	■	■	School 1	■	■	■	■	■
School 2	■	■	■	■	■	School 2	■	■	■	■	■
School 3	■	■	■	■	■	School 3	■	■	■	■	■
School 4	■	■	■	■	■	School 4	■	■	■	■	■
DISTRICT	■	■	■	■	■	DISTRICT	■	■	■	■	■
STATE	■	■	■	■	■	STATE	■	■	■	■	■
FARMS	■	■	■	■	■	FARMS	■	■	■	■	■
NON-FARMS	■	■	■	■	■	NON-FARMS	■	■	■	■	■
SPED - IEP	■	■	■	■	■	SPED - IEP	■	■	■	■	■
SPED - 504	■	■	■	■	■	SPED - 504	■	■	■	■	■

MATHEMATICS, GRADE 7 ASSESSMENT SPRING 2016 BY %						MATHEMATICS, GRADE 7 ASSESSMENT SPRING 2015 BY %					
LEVEL	1	2	3	4	5	LEVEL	1	2	3	4	5
School 1	■	■	■	■	■	School 1	■	■	■	■	■
School 2	■	■	■	■	■	School 2	■	■	■	■	■
School 3	■	■	■	■	■	School 3	■	■	■	■	■
School 4	■	■	■	■	■	School 4	■	■	■	■	■
DISTRICT	■	■	■	■	■	DISTRICT	■	■	■	■	■
STATE	■	■	■	■	■	STATE	■	■	■	■	■
FARMS	■	■	■	■	■	FARMS	■	■	■	■	■
NON-FARMS	■	■	■	■	■	NON-FARMS	■	■	■	■	■
SPED - IEP	■	■	■	■	■	SPED - IEP	■	■	■	■	■
SPED - 504	■	■	■	■	■	SPED - 504	■	■	■	■	■

MATHEMATICS, GRADE 8 ASSESSMENT SPRING 2016 BY %						MATHEMATICS, GRADE 8 ASSESSMENT SPRING 2015 BY %					
LEVEL	1	2	3	4	5	LEVEL	1	2	3	4	5
School 1	■	■	■	■	■	School 1	■	■	■	■	■
School 2	■	■	■	■	■	School 2	■	■	■	■	■
School 3	■	■	■	■	■	School 3	■	■	■	■	■
School 4	■	■	■	■	■	School 4	■	■	■	■	■
DISTRICT	■	■	■	■	■	DISTRICT	■	■	■	■	■
STATE	■	■	■	■	■	STATE	■	■	■	■	■
FARMS	■	■	■	■	■	FARMS	■	■	■	■	■
NON-FARMS	■	■	■	■	■	NON-FARMS	■	■	■	■	■
SPED - IEP	■	■	■	■	■	SPED - IEP	■	■	■	■	■
SPED - 504	■	■	■	■	■	SPED - 504	■	■	■	■	■

Trend data retrieved from 2106 Maryland Report Card shows the Absentee Rates of students missing 20 or more days of school increasing county wide.

ABSENTEE RATE >20 days	2016 PERCENT	2016 # OF STUDENTS	2015 PERCENT	2015 # OF STUDENTS	2014 PERCENT	2014 # OF STUDENTS
School 1	■	■	■	■	■	■
School 2	■	■	■	■	■	■
School 3	■	■	■	■	■	■
School 4	■	■	■	■	■	■
COUNTY AVG	■	■	■	■	■	■

#### 4.2. Goals, Objectives, and Milestones.

- By March 28, 2018, All students participating in the robotics program will achieve a 80% or higher cumulative average in Science and Mathematics classes.

- By year end 60% of all FARM students participating in the robotics program will earn a proficient score on Science PARCC a 4.6% increase as compared to county 2017 PARCC scores.
- By year end less than 9% of the students in the robotics program will miss more than 20 days of school a decrease of 2.85% of county average.

#### **4.3. Plan of Operation.**

The robotics program will use the FLL guidelines for the coaching methods used for the competition and community project. Teachers/coaches for the robotics program will be provided professional development in September on the FLL guidelines and competition. The teachers/coaches will attend a coaches training clinic provided by REACT who are experts in FLL. This will insure all teachers/coaches will have the background to effectively coach using the FLL guidelines and FLL core values. REACT will continue to mentor the teachers and coaches throughout the school year to provide support as needed and to help insure they follow the FLL guidelines and FLL core values. In an evaluation conducted by Brandeis University, 2011 87% of FLL students are more interested in doing well in school, 98% improved problem solving skills, 95% increased time management skills, 93% increased conflict resolution skills and 76% strengthened communication skills. These are all skills we want our student to have to be prepared for a STEM career. Improving problem solving skills and time management skills will directly improve their performance in the classroom connecting with objectives one and two, increasing county science and math grades and improving PARCC scores.

Encouraging better student attendance is our third goal of the program. To encourage attendance, we are including afterschool programs. “Research shows that participating in high quality Out of School Time programs helps increase engagement in learning and improves school day attendance.” (MOST, 2018-2017) The robotics program will include after school time as part of the after school program. By including after school time we can also extend the school day to reinforce the science lessons in the classroom and include robotics and engineering. The after school portion of the robotics program allows for students to have smaller student to teacher ratio to yield more individualized instruction. In ACPS we currently have science as a semester class. By including time after school extending for the whole school year we can actually extend the amount of time the students are exposed to science from one semester to the whole year.

Students will be preparing for the FLL competition starting their first week in the

program and will continue preparing until the competition in December. Approximately one month before the competition November 1, 2017 there will be a robotics night sponsored by REACT to allow for all the teams to share ideas about their community project and current robot design. The students will demonstrate what they have successfully completed to prepare for the FLL competition along with time to learn from each other. Closer to the competition on November 30, 2017 teams will meet together again to present their community projects. REACT will again be sponsoring the event this time it will be open to the community to see their projects and for the students to educate the community on robotics. This will increase their quality after school time and encourage them to increase their attendance in school so they can be better prepared to demonstrate to their peers and the community.

The regional competition for FLL is held on December 9, 2017. The competition connects to all of the goals of the robotics program, by extending science beyond the school day. The day of the competition they will complete the robotic challenge and present to three different panels of judges, community project, robot design, and core values.

After the competition and for the remainder of the school year the students will continue using the FLL guidelines to continue learning more about robotics and will continue to incorporate environmental literacy into their lessons. The time in the robotics program will be used to extend science beyond the semester they receive during the school day to all year long. This will improve science and math class grades and PARCC scores.

#### **4.4. Evaluation and Dissemination Plan.**

Evaluations will take place during the first two weeks of the program, in December one week after the competition and during the last two weeks of the program in May. Students, guardians and teachers/coaches will be given the survey via paper copy and/or via our district website. The option will be given to complete via paper or electronic depending on availability of computers at the student's home or current accommodation needs of the students. The parent and student pre, middle and post survey will ask questions to rate the students various 21st century work-life skills such as problem solving skills, time management, conflict resolution and communication. The surveys will also include qualitative questions on the student's desire to attend school daily and knowledge of robotics, science and math. The surveys will also include questions on the student's future plans in STEM fields such as desire to take more science and math classes in the future, interest in going to college and planning on majoring in STEM fields.

All of these questions will allow ACPS to compare pre, middle and post results to see improvements in the student's attitude toward school attendance, science class, math class, robotics and STEM over time. Additional questions will be asked on the middle survey to include satisfaction in preparation for the FLL competitions, the FLL competition and the 2 robotics nights. Additional questions will also be asked on the final survey to include satisfaction of the second half of the program and satisfaction of the program overall.

██████████ will create the evaluations, collect, aggregate and disseminate the data. The data will be presented to steering committee and distributed to stakeholders electronically. ██████████ will create the paper and electronic version of the evaluation for distribution to schools. The teachers/coaches at each school will distribute to the guardians and students, collect back paper copies and return back to ██████████.

#### 4.5. Management Plan/Key Personnel.

##### Key personnel:

Program Personnel	Responsibilities	Qualifications	Amount of Time Dedicated
Steering Committee Chair, ██████████	Guidance, direction, and support	Chief Academic Officer	As needed
Project Director, ██████████	Monitor overall implementation of the program across the county	Supervisor of Science	5%
STEM Coordinator, ██████████	Staging of partner support and enrichment activities	STEM Coordinator	5%
Mathematics Facilitator, ██████████	Ensure mathematics expectations are met	Assistant Supervisor of Mathematics	As needed
SPED Facilitator, ██████████	Ensure student IEP expectations are met	Assistant Supervisor of Special Education	As needed
Site teachers/coaches TBD	Daily coordination of the program at the school level and teach	Highly qualified secondary teachers	3.5 hours per day of program
<b>Meet:</b> Monthly to ensure the proper implementation of the project or as needed			

##### Committee Members:

- ██████████ - Chief Financial Officer of ██████████
- ██████████ - Administrative Assistant for Secondary Education
- ██████████ - Board of Education of ██████████
- ██████████ - Principal - School 1
- ██████████ - Principal - School 2
- ██████████ - Principal - School 3
- ██████████ - Principal - School 4
- ██████████, Science & STEM Supervisor, ██████████

██████████, Assistant Mathematics Supervisor  
 STEM Coordinator - ██████████, STEM & PTECH Coordinator  
 Site teachers/coaches- (two at each school) TBD

Partner:

REACT- nonprofit robotics group- mentor the coaches and students, provide coaches clinic

**4.5.1. Management Worksheet.**

Action Description	Date	Person Responsible
REACT coaches training clinic	September 2017	██████████, STEM coordinator/Project Director
Introduction of Program to ASP students and staff	September 2017	██████████, Science Supervisor ██████████, Asst. Math Supervisor ██████████ STEM Coordinator ASP Site Leaders
Robotics Program after school lessons	September through May	Teachers/coaches at respective schools
REACT Robotic night for students	November 1, 2017	██████████, STEM coordinator
REACT community robotics night/parent night	November 30, 2017	██████████ STEM coordinator REACT
FLL Regional competition	December 9, 2017	Teachers/coaches at respective schools ██████████ STEM coordinator
<b>Funder's Requirements</b>		
Quarterly Report #1 Due	11/1/2017	██████████
Quarterly Report #2 Due	3/1/2018	██████████
Quarterly Report #1 Due	5/1/2018	██████████
Final Evaluation Process	5/1/2018-5/18/2018	██████████
Final Report Due	6/29/2018	██████████
Annual Evaluation Due	6/29/2018	██████████

#### 4.5.2. Project Timeline.

Activity	Month									
	1	2	3	4	5	6	7	8	9	10
REACT coaches training clinic	X									
Robotics Program after school lessons	X	X	X	X	X	X	X	X	X	X
REACT Robotic night for students			X							
REACT community robotics night			X							
FLL Regional competition				X						
<b>Management</b>										
Order equipment	X									
Register each school with FLL	X									
Register for FLL Regional Competition		X								
Order transportation to Regional Competition		X								
Quarterly Reports			X				X		X	
<b>Implementation</b>										
Coaches clinic provided by REACT	X									
Teachers/Coaches meet with students during co-curricular and after school	X	X	X	X	X	X	X	X	X	X
REACT mentors coaches and students	X	X	X	X	X	X	X	X	X	X
Presentation of community projects		X	X							
Regional competition			X							
<b>Evaluation</b>										
Submit pre evaluation	X									
Submit evaluation of competition and community project portion of program				X						
Submit final evaluation									X	X

#### 4.6. Integration with Education Reform.

The robotics program is a natural fit covering all the Engineering Design NGSS performance expectations (MS-ETS1) for middle school. In addition, using the FLL theme hydro dynamics and combining with environmental literacy we will be covering many of the NGSS middle school Earth and Space Science (MS-ESS1) performance expectations and many crosscutting concepts that match in the other NGSS middle school content areas. Robot design and programming is also math oriented. Students will be constantly using all 8 of the CCR mathematical practices to solve their robotics challenges in addition to the teachers incorporating the CCR math standards into their lessons. As part of the FLL guidelines the students also need to document their engineering design and their community project. This documentation ties directly to the CCR English framework for writing. The presentations to the community and to the 3 different panels of judges directly ties into the CCR English speaking and listening

framework. The FLL guidelines and incorporation of environmental literacy incorporates many of the Maryland CCR standards and NGSS standards for middle school.

Keeping students safe is always a priority, we will be following the ACPS safety guidelines for all guest speakers and mentors who will be present at the robotic program.

We have other projects in the county in the elementary level which help support the middle school robotics program. All of our elementary schools have robotics lessons taught in at least one grade. The students were exposed to one week of Lego 2.0 We Do robotics. This is an introduction to robotics and programing which helps spark interest for the students and desire to continue at the middle school level. We also participate in the hour of code by Code.org with all of our schools to continue to keep interest in programing. In the future we hope to expand the robotics into more elementary to start the learning process at a younger age. The goal will be to have a large knowledge base when they enter high school to create a robotics program which competes at a higher level than FLL and can build much larger more complicated robots.

#### **4.7. Future Plans.**

This grant will supply the equipment for all 4 of our middle schools and fees associated with the FLL competition. Once the programs are established in each middle school the continuation cost of the program will be much less due to the high initial cost of the purchasing the equipment. The equipment is fully reusable for future years. REACT nonprofit group will continue to supply mentoring support and free coaching clinics for all schools with robotics programs. The middle school robotics programs established in the 2017-2018 school year will continue during co-curricular block and be part of the afterschool program in future years. The 2017-2018 school year will have the goal of 8 robotics programs. This includes all 4 middle schools, one high school and 3 elementary. During the school year 2018-2019 we would like to expand the program to include 3 more elementary programs to start introducing robotics at a younger age to a larger portion of the county and add one more high school. The increase in number of programs will be based on funds available through new grants along with funds and equipment provided by REACT.

## 5. Budget Narrative.

### 5.1. Line Item Listing of Budgetary Expenses.

Line Item	Calculation	Requested	In-kind	Total
<b>Salaries &amp; Wages</b>				
STEM Coordinator/Project Director	\$24.06/hr x 3 hrs/wk x 25 wks	\$1,805	\$0	\$1,805
REACT coaches clinic 3 hours, 2 coaches/teachers per school	\$22.73/hr X 3 hrs X 2 coaches X 4 schools	\$546	\$0	\$546
Competition Stipend 7 hours for 2 coaches per school	\$24.06/hr X 7 hrs X 2 coaches X 4 schools	\$1,347	\$0	\$1,347
<b>Total Salaries &amp; Wages</b>		<b>\$3,697</b>	<b>\$0</b>	<b>\$3,697</b>
<b>Contracted Services</b>				
Bus transportation 4 buses	INKIND MATCH - STEM Financing \$133.50/bus x 4	\$267	\$267	\$534
REACT mentoring support and coaching clinics	INKIND - Coaches clinic 3 hours training for 2 teachers/ coaches x 4 schools x \$75/hour	\$0	\$1,800	\$1,800
<b>Total Contracted Services</b>		<b>\$267</b>	<b>\$2,067</b>	<b>\$2,334</b>
<b>Supplies and Material</b>				
Supplies and materials for community project	\$125/school X 4 schools	\$250	\$250	\$500
Robot EV3 core kit (3 per school)	\$389.95 X 3/ school X 4 schools	\$4,679	\$0	\$4,679
LEGO MINDSTORMS Education EV3 Expansion Set, 3 per school	\$101.95 X 3/school X 4 schools	\$1,223	\$0	\$1,223
FIRST LEGO League Challenge Set (FSK, Field setup kit), 1 per school	\$75 X 4 schools	\$300	\$0	\$300
FLL field table, 1 per school	\$75 ea x 4 schools	\$300	\$0	\$300
<b>Total Supplies and Material</b>		<b>\$6,752</b>	<b>\$250</b>	<b>\$7,003</b>
<b>Other Charges</b>				
STEM Coordinator/Project Director In County Mileage	In County Mileage 1 day per week x 25 weeks	\$280	\$0	\$280
Team registration with FLL	\$225.00 X 4 teams	\$900	\$0	\$900
Regional competition registration	\$25.00 X 4 teams	\$100	\$0	\$100
Fixed Charges/Fringe Benefits	Salaries X 0.0797	\$295	\$0	\$295
<b>Total Other Charges</b>		<b>\$1,575</b>	<b>\$0</b>	<b>\$1,575</b>
Total Direct Costs		\$12,292	\$2,317	\$14,609
Indirect costs (1.9% of direct costs)		\$234	\$44	\$278
<b>Total Requested:</b>		<b>\$12,525</b>	<b>\$2,361</b>	<b>\$14,886</b>

# 5.2 Itemized Budget Form

STATE/FEDERAL

Receipt Agency Name	ALLEGANY COUNTY PUBLIC SCHOOLS
Revenue Source Name	

Grant Period	September 1, 2017 - June 20, 2018
Fund Source Code	

See "Financial Reporting Manual for Maryland Public Schools" for account descriptions  
 Check and complete a page for each funding source & TOTAL

\$12,525	STATE/FEDERAL
\$2,361	LOCAL/MATCH
\$14,886	TOTAL

CATEGORY/PROGRAM/ACTIVITY	BUDGET OBJECT						BUDGET BY CAT./PROG.
	01- SALARIES & WAGES	02 - CONTRACT SERVICES	03- SUPPLIES & MATERIALS	04 - OTHER CHARGES	05 - EQUIPMENT	08 - TRANSFERS	
<b>201 Administration</b>							
Program 21 General Support							0
Program 22 Business Support						234	234
Program 23 Centralized Support							0
<b>202 Mid-Level Administration</b>							
Program 15 Office of the Principal							0
Program 16 Inst. Admin. & Supv.	1805						1805
<b>203-205 Instruction Categories</b>							
Program 01 Regular Programs	1,892		6752	1280			9,924
Program 02 Special Programs							0
Program 03 Career & Technolog Programs							0
Program 08 School Library Media							0
Program 09 Instruction Staff Development							0
Program 10 Guidance Services							0
Program 11 Psychological Services							0
Program 12 Adult Education							0
<b>206 Special Education</b>							
Program 04 Public Sch Instructional Prog.							0
Program 09 Instruction Staff Development							0
Program 15 Office of the Principal							0
Program 16 Inst. Admin & Supervisor							0
<b>207 Student Personnel Services</b>							0
<b>208 Student Health Services</b>							0
<b>209 Student Transportation</b>		267					267
<b>210 Operation of Plant</b>							
Program 30 Warehouse and Distribution							0
Program 31 Operating Services							0
<b>211 Maintenance of Plant</b>							0
<b>212 Fixed Charges</b>				295			295
<b>214 Community Services</b>							0
<b>215 Capital Outlay</b>							
Program 34 Land and Improvements							0
Program 35 Buildings and Additions							0
Program 36 Remodeling							0
<b>Total Expenditures By Object</b>	<b>\$3,697</b>	<b>\$267</b>	<b>\$6,752</b>	<b>\$1,575</b>	<b>\$0</b>	<b>\$234</b>	<b>\$12,525</b>

\* Includes the following: Payment to another LEA, nonpublic school, or state institution; and Indirect Cost Recovery.

Grant Number
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ROBOTICS PROGRAM
Grant Name

Budget Reviewed and Approved:  
 LSS Finance Officer:

Name	Signature	Telephone #	Date

MSDE USE ONLY						
Budget Approved By:						
	LEA Official - Superintendent of Schools	Phone #	FAX #	Date	MSDE Official	Date

## APPENDIX A

### 6. Appendices.

#### 6.1. Works Cited.

Evaluation of the 2012-13 FLL Program-Executive Summary December 2013

Center for Youth and Communities, Brandeis University

Larry, G. (2015, June 16). Cumberland named poorest city in Maryland. *Cumberland Times News*. Retrieved from [http://www.times-news.com/news/cumberland-named-poorest-city-in-maryland/article\\_c7da0544-13b5-11e5-bed1-e35447fb9c39.html](http://www.times-news.com/news/cumberland-named-poorest-city-in-maryland/article_c7da0544-13b5-11e5-bed1-e35447fb9c39.html)

“Local Area Unemployment Statistics (LAUS) - Workforce Information & Performance.” *Local Area Unemployment Statistics (LAUS) - Office of Workforce Information and Performance (OWIP)*, MD Office of Workforce Information and Performance, 1 July 2017, [www.dllr.state.md.us/lmi/laus/](http://www.dllr.state.md.us/lmi/laus/).

MOST Network. (2018-2017) School Day Attendance & OST. Retrieved from:

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“QuickFacts.” *U.S. Census Bureau QuickFacts Selected: Allegany County, Maryland; Maryland; UNITED STATES*, U.S. Census Bureau, 1 July 2016, [www.census.gov/quickfacts/fact/table/alleganycountymaryland,MD,US/PST045216](http://www.census.gov/quickfacts/fact/table/alleganycountymaryland,MD,US/PST045216).

## APPENDIX B

**6.2. Letters of commitment from all project partners and principals of participating schools (as appropriate).**



108 Washington Street • P.O. Box 1724 • Cumberland, MD 21501-1724  
Telephone (301) 759-2000 • www.acpsmd.org

*Members of the Board of Education*

Laurie P. Marchini, President  
Sara-Beth Bittinger, Vice President  
Lorelee M. Farrell  
Wayne T. Foote  
Tammy M. Fraley

*Superintendent of Schools*  
David A. Cox, Ed.D.

August 3, 2017

Dear [REDACTED]:

I am in full support of the Allegany County Public Schools' proposal to provide a Robotics Program at the four middle schools ([REDACTED]) in the county as part of the after school program. We recognize the importance of introducing students to STEM opportunities as much as possible.

**1. Acknowledging and supporting the goals and objectives of the project.**

School staff and partners will assist in providing opportunities for students and families to participate in Robotics activities that will make them competition ready. Over the course of the regular school year we will support the REACT partners with engaging students in STEM enhanced activities that incorporate environmental literacy and Next Generation Science Standards while remaining committed to increasing STEM awareness and interest in STEM fields as college and career options.

**2. Expected gains from the project.**

The Middle School Robotics Program will create a sustainable structure within the after-school program to support student participation in the First Lego League. This will promote team building, critical thinking skills, the application of real-world math and science concepts, along with the development of college and career readiness skills like professionalism, cooperation, and overcoming challenges. First Lego League has demonstrated success in increasing student interest in school and interest in attending college. Our goal is to have the same impact in Allegany County Middle Schools.

**3. Expertise, resources, and financial contributions the participant is making towards the project. Financial contributions (in-kind and cash).**

- a. Personnel: Highly qualified (regular day) teachers will be involved in the program, with the support from certified teachers from the Allegany County Public School system substitute teacher list.
- b. Equipment: The Robotics Program will have access to classrooms and equipment, and will be able to participate in special activities when space/time are available.
- c. Financial Support: N/A
- d. Cash: N/A
- e. Other Resources: Participation in the annual outreach programming for community members in Allegany County or as needed.

**4. Roles and responsibilities of the partner.**

I support the goal of improving problem solving skills and time management skills which will directly improve student performance in the classroom, increasing county benchmark scores and improving PARCC scores, I agree to:

- Facilitate meaningful communication between the school staff and the after school program. Provide on-going opportunities for school staff and after school staff to plan, coordinate, and integrate curricular areas with after school activities.
- Disseminate program information widely using appropriate communication avenues such as Messenger, the school website, school newsletters and other forms of communication with parents.

- Assure the availability of clean spaces for the after school program in an adequate number of classrooms, as well as the cafeteria, auditorium, library, computer lab, gymnasium, and any other relevant space, including adequate office space for the site leader and other key personnel.
- Supply adequate and appropriate storage space for after school program materials and equipment.
- Facilitate the provision of full custodial services at no cost to the program.

**5. Continuing the partnership beyond the grant period.**

School staff intends to continue this partnership beyond the grant period, and will actively join in seeking resources to make that possible.

Sincerely,

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]



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*Members of the Board of Education*  
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Lorelee M. Farrell  
Wayne T. Foote  
Tammy M. Fraley

*Superintendent of Schools*  
David A. Cox, Ed.D.

August 3, 2017

Dear [REDACTED]:

Allegheny County Public Schools' Science Department is in full support of the Allegheny County Public Schools' proposal to provide Robotics programming at the four middle schools ([REDACTED]) in the county.

**1. Acknowledging and supporting the goals and objectives of the project.**

The Science Department will support the extended day efforts of the project to help students and their families over the course of the regular school year during the after school program with the goal of increasing awareness, excitement, and interest for students to become college and career ready to enter STEM fields.

**2. Expected gains from the project.**

The Middle School Robotics Program will allow students to work in teams to discover STEM from a fresh perspective all the while learning valuable skills that will prepare them for real world problem solving.

**3. Expertise, resources, and financial contributions the participant is making towards the project. Financial contributions (in-kind and cash).**

- a. Personnel: Science teachers will provide assistance at each of the middle schools.
- b. Equipment: Access to classrooms and equipment, and will be able to participate in special activities when space/time is available.
- c. Financial Support: In Kind: N/A
- d. Other Resources: Participation in the annual outreach programming for community members in Allegheny County or as needed.

**4. Roles and responsibilities of the partner.**

I support the goal of providing students with an opportunity to engage in a Robotics Program as part of the middle school extended day program as a partner.

**5. Continuing the partnership beyond the grant period.**

The Science Department intends to continue this partnership beyond the grant period and will actively join in seeking resources to make that possible.

Sincerely,

[REDACTED]



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Telephone (301) 759-2000 • www.acpsmd.org

*Members of the Board of Education*  
Laurie P. Marchini, President  
Sara-Beth Bittinger, Vice President  
Lorelee M. Farrell  
Wayne T. Foote  
Tammy M. Fraley

*Superintendent of Schools*  
David A. Cox, Ed.D.

August 3, 2017

Dear [REDACTED]:

Allegheny County Public Schools' Mathematics Department is in full support of the Allegheny County Public Schools' proposal to provide a Robotics Program at the four middle schools ([REDACTED]) in the county.

**1. Acknowledging and supporting the goals and objectives of the project.**

The Mathematics Department will support the extended day efforts of the project to help students and their families over the course of the regular school year during the after school program with the goal of increasing awareness, excitement, and interest for students to become college and career ready to enter STEM fields.

**2. Expected gains from the project.**

The Middle School Robotics Program will allow students to work in teams to discover STEM from a fresh perspective all the while learning valuable skills that will prepare them for real world problem solving.

**3. Expertise, resources, and financial contributions the participant is making towards the project. Financial contributions (in-kind and cash).**

- a. Personnel: Science teachers will provide assistance at each of the middle schools.
- b. Equipment: Access to classrooms and equipment, and will be able to participate in special activities when space/time is available.
- c. Financial Support: In Kind: N/A
- d. Other Resources: Participation in the annual outreach programming for community members in Allegheny County or as needed.

**4. Roles and responsibilities of the partner.**

I support the goal of providing students with an opportunity to engage in a Robotics Program as part of the middle school extended day program as a partner.

**5. Continuing the partnership beyond the grant period.**

The Mathematics Department intends to continue this partnership beyond the grant period and will actively join in seeking resources to make that possible.

Sincerely,

[REDACTED]



August 1, 2017

[REDACTED]  
Allegany County Public schools  
P.O. Box 1724  
Cumberland, MD 21501-1724

Dear [REDACTED]

REACT, Robotics Engineering, Allegany County - Together is in full support of Allegany County Public Schools' proposal to provide mentoring for coaches and students at the four middle schools ([REDACTED]) in Allegany County, MD.

**1. Acknowledging and supporting the goal and objectives of the project**

REACT will provide a coaches training clinic to increase the teacher's/coaches knowledge of the FLL guidelines for the competition and community project. React will also continue to support the robotics program by mentoring each team throughout the school year.

**2. Expected gains from the project**

REACT is a non-profit organization whose goal is to increase robotics and engineering in Allegany County. Outreaching to the schools directly supports the mission and goals of REACT

**3. Expertise, resources and financial contributions the participant is making towards the project. Financial contributions (in-kind and cash)**

Personnel will provide in kind time for the coaches training clinic and mentoring throughout the school year. REACT will not contribute equipment, financial support or cash to this project.

**4. Roles and responsibilities of the partner**

REACT supports the goals of increasing the robotics and engineering knowledge base of the teachers and coaches through the coaches training clinic. They will also mentor each team to help with robotics and engineering issues a program may encounter. The mentors will also help with the real world connections to environmental literacy.

**5. Continuing the partnership beyond the grant period.**

REACT will continue to support and mentor the middle school robotics programs in Allegany County beyond the grant period and will also continue to support programs beyond the grant in the elementary and high school level. REACT will mentor all robotics programs in the 2018-2019 school year and beyond.

Sincerely,

[REDACTED]  
[REDACTED]  
[REDACTED] T

APPENDIX C

6.3. Résumés of Key Personnel.

[REDACTED]

---

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 6.4 Signed assurances

## APPENDIX D

### ASSURANCES

By receiving funds under this grant award, I hereby agree, as grantee, to comply with the following terms and conditions:

1. Programs and projects funded in total or in part through this grant will operate in compliance with State and federal laws and regulations, including but not limited to the 1964 Civil Rights Act and amendments, the Code of Federal Regulations (CFR) 34, the Elementary and Secondary Education Act, Education Department General Administrative Regulations (EDGAR), the General Education Provisions Act (GEPA) and the Americans with Disabilities Act.
2. The Maryland State Department of Education (MSDE) may, as it deems necessary, supervise, evaluate and provide guidance and direction to grantee in the conduct of activities performed under this grant. However, failure of MSDE to supervise, evaluate, or provide guidance and direction shall not relieve grantee of any liability for failure to comply with the terms of the grant award.
3. Grantee shall establish and maintain fiscal control and fund accounting procedures, as set forth in 34 CFR Parts 76 & 80 and in applicable State law and regulation.
4. Grantee shall adhere to MSDE reporting requirements, including the submission of progress reports.
5. Entities receiving \$300,000 or more federal funds need to have an annual financial and compliance audit in accordance with OMB Circular A-133.
6. Grantee shall retain all records of its financial transactions and accounts relating to this grant for a period of three years, or longer if required by federal regulation, after termination of the grant agreement. Such records shall be made available for inspection and audit by authorized representatives of MSDE.
7. Grantee must receive prior written approval from the MSDE Program Monitor before implementing any programmatic changes with respect to the purposes for which the grant was awarded.
8. Grantee must receive prior written approval from the MSDE Program Monitor for any budgetary realignment of \$1,000 or 15% of total object, program or category of expenditure, *whichever is greater*. Grantee must support the request with reason for change. Budget alignments must be submitted at least 45 days prior to the end of the grant period.
9. Requests for grant extensions, when allowed, must be submitted at least 45 days prior to the end of the grant period.
10. Grantee shall repay any funds which have been finally determined through federal or state audit resolution process to have been misspent, misapplied, or otherwise not properly accounted for, and further agrees to pay any collection fees that may subsequently be imposed by the federal and/or state government.
11. If the grantee fails to fulfill its obligations under the grant agreement properly and on time, or otherwise violates any provision of the grant, MSDE may suspend or terminate the grant by written notice to the grantee. The notice shall specify those acts or omissions relied upon as cause for suspension or termination. Grantee shall repay MSDE for any funds that have been determined through audit to have been misspent, unspent, misapplied, or otherwise not properly accounted for. The repayment may be made by an offset to funds that are otherwise due the grantee.

I further certify that all of the facts, figures, and representations made with respect to the grant application and grant award, including exhibits and attachments, are true and correct to the best of my knowledge, information, and belief.

	8/3/17
Superintendent of Schools/Head of Grantee Agency	Date

## APPENDIX E

### **6.5. LEA documentation or URL to policies related to safety and privacy, including those related to non-system employee**

- Students will remain at school at the conclusion of the school day and report to the designated meeting area. At the conclusion of the program, students will be transported home by ACPS county school buses unless they are within walking distance from the school.
- Students will be transported by school buses and students with disabilities will receive appropriate accommodations as needed. School buses will be used to transport students to off campus sites and for the return to the school. Cell phones and radios will be utilized to connect the Program Manager with site coordinators, school bus contractors, and ACPS' Department of Transportation. A parent sign-out procedure for students not riding the school bus will also be in place at each site.
- All Staff and volunteers are screened and background checks and fingerprints will be completed in accordance with ACPS guidelines. The Chief Human Resources Officer for ACPS will approve all staff and volunteers. ACPS guidelines meet the standards set forth in Section 5-560 *et seq.* of the Family Law Article of the Maryland Annotated Code.

## APPENDIX F

### **6.6 The General Education Provisions Act (GEPA), Section 427**

The program supports equitable participation and is open to any student in grades 6-8 but specifically targeted to FARM students who achieved a PARCC score of 1, 2, or 3 on the Mathematics or ELA PARCC Spring 2016 assessment. Special Education Facilitators (SEF) will share all IEP requirements for program participants with program administrators, and they will assist after school staff to ensure that accommodations are being met. Special needs for health and transportation will be arranged as needed. Additionally, translation services will be provided as needed for English as a Second Language (ESL) students. Interested families/students eligible to attend will be invited to the September orientation meeting. The program provides services that are secular, neutral and non-ideological.