

Chairman's Award - Team 1629

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2018 - Team 1629

Team Number

1629

Team Name, Corporate/University Sponsors

Garrett County Public Schools/Pillar Innovations/Beitzel Corporation/Wilson Supply & Northern Garrett High School & Southern Garrett High School

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2017/2018 year and the preceding two to five years

2018 marks our 14th year as a FIRST Robotics Team. GaCo is proud to have 100% of alumni move on to a four year college, 90% in a STEM related field. With only 20% of local students going on to college, this is quite an accomplishment! We have alumni who have attended Cornell, MIT, Case Western, Bucknell, WVU, Va Tech, UMD and a Dean's List Winner at WPI. These students, who have been inspired to become engineering professionals, inspire younger student members to follow their example.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2017/2018 year and the preceding two to five years

This is where we excel! LEGO is our trademark & key to success. Youth & adults from all over the world marvel at our creations to add value to our community. In 2014 we recreated the International Kayak Course, in 2015 we made a LEGO train/ town model for the 250th Anniversary of Friendsville, in 2016 we built an interactive map of Garrett County, and this year we have created a Earth, Moon and Sun Orrery all completely designed from LEGO. LEGO and GaCo have become synonymous in our community!

Team's innovative or creative method to spread the *FIRST* message

Our team looks for every opportunity to represent FIRST in Garrett County and share its message. For the last two years our team provided the "opening act" for our local arts council's Chautauqua (monologues where actors portray famous people.) This past year, one of our students portrayed Nikola Tesla to explain why he (Tesla) thinks FIRST would named an FRC Championship Field after himself. Lots of research went into the presentation which put the "A" in STEM and introduced many to FIRST!

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

Our team members are enthusiastic and genuinely believe they are making a difference. They have experienced the joy and satisfaction of engaging an 8 year old in a STEAM encounter. Moreover, they are anxious to share their experiences and are ready to help others have the same joy. We seek every opportunity to present at district, championship conferences, and community events. It's what we intentionally model for other teams to observe and hopefully emulate at district and Championship events.

Describe the team's initiatives to help start or form other FRC teams

Our team has expanded its vision to impact students not only in Garrett County but all of Appalachia. To that end, we have taken steps to form a partnership with the Appalachian Regional Commission (ARC.) Through our partnership, ARC will provide funding to start FRC programs similar to ours. Since the Fall of 2017, we have already visited three districts (1 in WV, 2 in PA) to demonstrate GaCo's model for school and system-wide impact - beyond that of just making a difference to FIRST students.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

This year, we are responsible for 12 FLL, 5 FTC and 4 FLL Jr teams along with hosting a MD FLL qualifier and co-hosting our first FTC qualifier - both a huge success! We've expanded our FLL qualifier from 16 to 23 teams. Next year we are planning for a 32 team FLL qualifier to accommodate 9 new rookie teams. We've placed new expectations on our FRC students to mentor at least one FIRST team. To that end, we've instituted "mentor nights" where all FIRST teams meet together under one roof.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

GaCo has transitioned from just a "team" to an entire "program" which includes FLL Jr, FLL and FTC. We are building a model in which all students belonging to "GaCo" teams (FLL, FTC and our FRC team) are expected to mentor younger teams. With the help of a \$10,000 MSDE Robotics Grant, GaCo has expanded its FTC program to 5 teams in grades 7-12, mostly embedded in the school day which makes FTC accessible to more students. GaCo FTC students are expected to mentor FTC teams as Juniors and Seniors.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

GaCo is developing leaders in STEM Education. Our meetings have been restructured to encourage the development of GaCo students as mentors of younger FIRST teams. Emphasis is placed upon personal development through helping/teaching others. We've partnered the RoboLions, 2199, to spread our top spinners initiative through their county. FRC students serve as fun, fair & encouraging referees at our FLL qualifier, open houses, and special events. FLLJr, FTC, and FLL students love driving our robot!

Describe your Corporate/University Sponsors

Because we come from such a rural area we have developed personal relationships & connections. 1629 is a family! Our school system, Pillar Innovations Inc., GC Government, and Garrett College are vital to our success. Since our rookie year, 3 project engineers from Pillar have been our robotic backbone. These mentors are vested in the success & development of our team & its students. Our professional mentors are excellent role models & inspire students to follow in their STEM footsteps.

Describe the strength of your partnership with your sponsors with special emphasis on the 2017/2018 year and the preceding two to five years

Throughout its 14 year history, our team's most valuable partner remains to be our school system, Garrett County Public Schools (GCPS.) The most valuable asset we gain from our partners is access students and GCPS provides lots of access! In turn, we provide hands-on, memorable, STEAM lessons (our STEM Waypoints) to every 3rd, 4th, and 5th grader in our district as well as provide opportunities for GCPS tech ed and CS teachers to integrate FIRST programs into their curriculum, a win-win for all!

Describe how your team would explain what *FIRST* is to someone who has never heard of it

To us, FIRST represents opportunity- yes, an opportunity to build competitive robots that we can all rally behind, but more importantly, an opportunity to make an impact on youth in our community and around the world giving them an excitement and preparation for STEAM. It provides a framework that both develops our FRC students for real world challenges as well as empowering us to change the world one child at a time. An opportunity, to expand our reach by helping others make a difference!

Briefly describe other matters of interest to the *FIRST* judges, if any

GaCo is all about our vision, which is for "STEM Ready" students which makes us valuable to our schools and community. However, as a FIRST team, we stand ready to be of value to FIRST as well. Since last season our team has presented at the FIRST Conference in St. Louis, partnered with LEGO Education and FIRST to represent both LEGO & FLL on the exhibit floor at the 2017 Common Ground Conference and even had our students and FRC robot participate in last year's Global Innovation Awards Ceremony!

Team Captain/Student Representative that has double-checked this submission.

Jessica Storck

Essay

FRC Team 1629, the Garrett Coalition (GaCo), believes that we have made a difference because what we do matters. Everything we do is driven by a single vision which originally benefited all students in rural Garrett County, MD. Our team has been working towards making our vision a reality in our county school district for the last five years. The goals and objectives we have set towards our vision have been met with much success. As our team wants to make even more of difference we are expanding our target to include all students throughout the Appalachian region of which we are part. ALL of Appalachia is now GaCo's mission field and we are even more energized. Now, it's time to expand our reach by helping others make a difference.

GaCo's vision is for every student in Appalachia to be "STEM Ready." For every student to fully develop the foundational skills he/she needs to be successful in STEM by the 5th grade. One foundational skill the team focuses on developing is a strong sense of "spatial reasoning", which is essential for success in STEM and, according to research, must be developed by age 10. Our vision makes us unique. It goes beyond any robots we build; competitions we attend; or awards we win. Those are tools we use to build our vision. A carefully crafted action plan that includes benchmarked activities based on sound strategies. Our action plan supports MEASURABLE objectives, which support goals, all designed to bring about our VISION ensuring that what we do matters and expanding our reach. In order to make even more of a difference and work towards our vision throughout Appalachia, it is time that GaCo steps up, expands its reach, and helps school districts establish similar FIRST programs using our team's model- the "GaCo Model"!

The GaCo Model is making a difference to students beyond those in FIRST. GaCo makes this difference through its "STEM Waypoint" initiative. Waypoint lessons target all students in grades 3 through 5 in the team's school district, providing each student with a unique and engaging STEM lesson at each grade level- all taught by the team's high school students. All STEM Waypoint lessons are research and standards based, measurable and many use LEGO machines that students build and get to keep. GaCo students created the lessons based on College and Career Ready Standards along with NGSS, 21st Century and Computer Science standards and have been very well received by students, parents, and teachers. GaCo's STEM Waypoints can be easily replicated in any school or school system, expanding our reach.

In the GaCo Model our students mentor younger FIRST teams. In partnership with Garrett County Public Schools (GCPS) GaCo supports 12 FLL teams, 5 FTC teams and 4 FLLJr teams. These teams would not exist without our support. GaCo's support not only includes funding for registration fees, parts, and other materials but also GaCo students taking on the responsibility of mentoring these teams. The GaCo Model is developing our student members to be STEM Education Leaders. This year, our team's meetings have been restructured to encourage the development of GaCo students as mentors of younger FIRST teams. Emphasis is placed upon personal development through doing good for others. During the FLL season teams meet in two common locations in Garrett County. These mentoring nights provide wonderful opportunities for all our FIRST teams to practice Gracious Professionalism and Cooperation.

The GaCo model includes being an active part of our community. This gives our team countless opportunities to expand our reach. As a "year-round team", GaCo is well represented at all community events. Whether it's participating in Relay for Life for the American Cancer Society, Deep Creek Dunk for Maryland Special Olympics or a number of other local charitable organizations - GaCo has a presence that makes our team's vision (and FIRST) LOUD in our community. Garrett County organizations have come to depend on GaCo not only to help them out, but partner with them to bring STEM to their events. Our team has a cadre of activities - all designed to ensure GC youth are STEM Ready. We make ourselves (and FIRST) even louder in our community by being a part of local festivals and events as well as hosting our own special events. Our Easter Egg-stravaganza, and Park-It-and-Rocket- are intended to ENGAGE youngsters, CONNECT STEM to everyday life and make us a valuable PARTNER to our community.

Partnerships help us establish our vision as well as the vision of our partners, a true win-win for all. The most recent example of this is our partnership with the Dove Center, an organization that provides safety and counseling to victims of domestic violence and sexual assault. The Festival of Trees is one of the Dove Center's main fundraisers that occurs during the holiday season. This year GaCo partnered with the Dove Center by providing "holiday-themed" STEM activities for elementary-aged children in attendance as well as providing a Christmas tree decorated with LEGO ornaments which auctioned off for more than \$400... another win-win for us and the Dove Center!

The GaCo Model demonstrates what's possible when Gracious Professionalism is practiced. Garrett County, Maryland's least populated by density and most rural county, is our home. Two high schools exist in our county's rural school system - Northern and Southern Garrett. Our FRC team is formed by students from both high schools - one team, two schools. Schools which, for the most part, are rivals. GaCo brings our schools and community together as they rally behind us. It's not uncommon to see GaCo robots at a Northern-Southern varsity game during halftime. GaCo is evidence of how our two high schools can come together.

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One final ingredient of the GaCo Model is advocacy. We are making a difference because of our advocacy at the state and federal level. We are part of the movement that is working through government channels to bring funding to underserved schools along with working to have FRC designated a sport in MD affording more opportunities to more students around the state. In 2016 we had the opportunity to testify for state of MD funding for FIRST programs by testifying at a senate hearing on behalf of Senate Bill 582 (which by the way did become law and helped to fund GaCo's five FTC teams) as well as attending the National Advocacy Conference with Team Rush 27. We believe our advocacy has made a difference.

The GaCo Model is well established. Our team truly believes that it will continue to make a difference in Garrett County and now, with new opportunities, to make a difference in districts similar to ours throughout the Appalachian region. The GaCo Model is intended to make all students STEM-Ready. True to our mission of being a leader in STEM Education, we are embarking on a journey to spread the "GaCo Model" throughout the Appalachians.

This journey started when GaCo student members presented their STEM Waypoints initiative at the Mid Atlantic Conference for Personalized Learning (MACPL) in Baltimore at the request of MSDE. Educators participated in our workshop and received the full experience of our STEM Waypoint lessons. This exceeded the expectations of the participants and was very well received. Even the doorman at the conference hotel got a taste of what's all possible through our STEM Waypoints.

One conference attendee, a Superintendent of a school district in Pennsylvania, was intrigued with our STEM lessons and location-the very location that he and his fellow Superintendents travel to for an annual Intermediate Unit (IU) retreat each Fall. Consequently, GaCo, was the host of 14 PA Superintendents during their last retreat to Garrett County. They were able to spend a whole day with our team and even got to observe GaCo students teaching their third grade lesson first hand. Many of them even participated in helping. To say that they were impressed with our program is an understatement. Within the first hour of the day with our team, one Superintendent commented that in his 8 years of being a Superintendent, he has never experienced a more worthwhile and motivating presentation. At the end of the day all 14 Superintendents were inspired and left with a strong desire to replicate the "GaCo Model" in their respective districts.

Since then, GaCo students have visited two of their districts to share our Model with their staff and members of their School Boards. One district even paying all expenses the team incurred on the overnight trip. Our students demonstrated their 3rd grade lesson with superintendents and their full staffs in attendance. Both visits exceeded the expectations of the Superintendents who invited us. More trips to other districts in their IU are in the planning phase with follow-up visits being planned with the districts we have already visited. This is a huge undertaking for GaCo as the closest district in the IU is 3 hours away!

This has encouraged our team to expand its vision. We are energized and want to make an even bigger difference throughout Appalachia. We have met with representatives from the Appalachian Regional Commission (ARC.) Our goal is to partner with the ARC to provide the means for GaCo students to travel to districts throughout Appalachia to share our vision and provide funding for districts we visit to start FIRST programs based on the GaCo Model. This is our destiny and it will happen with or without ARC funding!

Our team is emerging as a leader in the FIRST community as a role model for other FRC teams. Not only impacting the lives of our student members, but impacting our schools, community and every student in Garrett County and now, Appalachia. GaCo is much more than just a robotics team; our destiny is to leave a legacy where generations will be affected by our vision. It is our desire to expand our reach by helping others make a difference in their own schools and communities.