



# YOUTH TEAM MEMBER REGISTRATION

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## Chairman's Award Submission Summary

**The deadline for Chairman's Award submissions is February 4, 2016 3:00 PM EST**

| Field (Required & Optional)                 | Summary   | Status |
|---|---|--------|
| <b>Judge This Submission?</b>               | <b>Yes.</b>   |        |
| <b>Team Number</b>                          | 1311  |        |
| <b>Team Name</b>                            | Kell Robotics / Kennesaw State University / Shaheen & Company / United Technologies / GE Volunteers / Novelis / Standridge Color / Automated Logic / Lockheed-Martin Aeronautics / University System of Georgia / Technical College System of Georgia / WIT / Best Buy / R Design Works / Kimberly-Clark / Johnnys Pizza / Nypro / Peterson Aluminum / AM Castle / Georgia Power / STEM Leadership Foundation / AIAA / Cobb EMC / Arylessence / ASME / Dow / Mercer University / Redstone Government Consulting & Kell High School & Kennesaw Mountain High School & North Cobb High School & Sprayberry High School & Etowah High School |        |
| ● <b>Impact on Team Members</b>             | FIRST has changed the lives of every student on our team, expanding our career choices and exposing us to engineering. We have developed leadership, communication, and team building skills that set our students apart. FIRST has increased our confidence, encouraging us to tackle big problems. Many of us have also been able to obtain internships using the skills we have acquired through FIRST. Scholarships earned through FIRST have expanded our college choices and helped us to pursue STEM careers.  |        |
| ● <b>Impact on Community</b>                | We are a community team, opening our doors to students at multiple schools and homeschoolers. We have made it our goal for every student, including those in underserved areas, to be able to participate in FIRST. Our outreach program has increased community enthusiasm for FIRST and made Georgia one of the fastest growing regions of FIRST. We are also receiving widespread support for a new educational and economic growth model we developed to incorporate FIRST programs in every Georgia school.  |        |
| ● <b>Innovative Methods to Spread FIRST</b> | Over the past five years, we have promoted FIRST at over 40 events each year. We exhibit to a diverse audience at events hosted by Women In Technology, 100 Black Men of Atlanta, and Girl Scouts. Kell is a featured venue for the Atlanta Science Festival and at the Tellus Museum each year. Our team has gone beyond just political advocacy, working directly with our political leaders to promote FIRST. We have  |        |

|  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>● <b>Role Model Characteristics</b></li> </ul>    | <p>engaged universities and colleges directly to incorporate FIRST into STEM education.</p> <p>We train students and mentors from other teams and have lent out up to 11 robots at a time to use for continued training. Our team promotes FIRST at over 40 events annually. We have helped other teams find over \$25,000 in sponsor funds in the last 3 years. Our team has started 24 FRC teams and 14 FLL teams, mentored 18 FRC teams and 16 FLL teams, and assisted many others. We focus on bringing FIRST to every student, using our strong partnerships to break down obstacles to FIRST participation.</p> |    |
| <ul style="list-style-type: none"> <li>● <b>Starting FRC Teams</b></li> </ul>            | <p>We have started a total of 24 FRC teams, 16 in the last 5 years and 5 this year. Our team has created a strong network, through our outreach and partnerships, to identify new mentors and provide the support needed to form and sustain new teams. We provide website resources, find sponsors, and train mentors and students of new teams. Also, we have developed a new, widely supported, education and economic growth model that, when implemented, will result in a FRC team in every Georgia high school.</p>  |    |
| <ul style="list-style-type: none"> <li>● <b>Starting Other Teams</b></li> </ul>          | <p>We have started 14 FLL teams in the past 5 years. Our team reaches out to prospective FLL teams by exhibiting at local elementary and middle schools. Outside of public education, we have partnered with the Girl Scouts of Greater Atlanta and the Boys and Girls Club of Rome to create new teams. We host a boot camp for potential teams to learn about FLL. Our education and economic growth model, when implemented, will also result in a FIRST team in every Georgia elementary and middle school.</p>   |    |
| <ul style="list-style-type: none"> <li>● <b>Assist Other Teams</b></li> </ul>            | <p>Our team assists countless FIRST teams in multiple ways. We host FRC building and programming sessions and provide training, allowing teams to take home one of our robots to continue their training independently. We hosted 2 FLL scrimmages with mock project judging this year. Multiple FRC and FLL teams visit our worksite to use our resources and get advice from our students and mentors. We also provide parts (over \$5,000 in the last 3 years) to other teams and train mentors of other teams.</p>  |  |
| <ul style="list-style-type: none"> <li>● <b>Mentor Other Teams</b></li> </ul>            | <p>Our team members mentored 16 separate FLL teams, 10 this year. We have also mentored 18 FRC teams. Our team trains them on basic robot build, design, and programming, and shows them how to find part suppliers and other needed information using our website. We also help them identify sponsors and funding. Teams visit our facility to work on their robots and we communicate regularly to keep them on track. We also provide leadership, team building, and other training needed to sustain a team.</p>   |  |
| <ul style="list-style-type: none"> <li>● <b>Corporate/University Sponsors</b></li> </ul> | <p>We have over 30 strong partnerships. Over 20 are corporate sponsors providing financial support. Our strategic partnerships include Kennesaw State University, MIT, Mercer University, the Technical College System of Georgia, and the University System of Georgia. Our political partnerships include the Georgia Governor's Office, Georgia Department of Economic Development, and Georgia Department of Education. We also partner with nonprofits such as WIT, 100 Black Men of Atlanta, and the Girl Scouts.</p>   |  |
| <ul style="list-style-type: none"> <li>● <b>Strength of Partnership</b></li> </ul>       | <p>Our partners provide over \$60,000 of cash contributions per year. We have also obtained funding for other teams using our strong</p>  |  |

**Explain FIRST**


partnerships. For the past two years, we have been leveraging the strength of our partnerships. We brought our corporate, university, education, and political partners together to develop a roadmap and new 21st Century Education Model. Our model will provide FIRST opportunities to all Georgia students, improve workforce development, and increase economic development.

FIRST is an international STEM organization that provides opportunities for K-12 students to learn and apply STEM problem solving skills by designing, building, and programming competition robots. Students in four age groups learn teamwork, presentation, leadership, and technical skills. FIRST exposes students to new career options, provides scholarship opportunities, and inspires them to pursue STEM careers. FIRST aims to create new engineers and the next generation of innovative leaders.

**Other Considerations**

Over the past 8 years, we have been featured 12 times by local TV affiliates, 7 times in national press articles, and numerous times in newspaper articles, helping us spread the FIRST message. Our team hosts and runs a FLL regional and super regional annually, hosts and runs FTC regional competitions, and hosts a mentor advisory conference each year. We provide tour guides and other assistance at FRC competitions. Our team also assisted Georgia FIRST with 2016 district event planning.

**• Main Essay**

There is a reason we are so passionate about providing the opportunity to participate in FIRST programs to every student. We believe FIRST is not about us but rather about how we impact others; we call it "FIRST in Our Hearts." 

FIRST team 1311, Kell Robotics, started in 2004 at Kell High School with 6 students. We have always opened our doors to students at other schools that do not have FIRST teams. Currently, we have 27 team members from 5 different high schools, across 2 counties, and home schooled students.

For many years, our team has had a sustained strategy to increase opportunities for FIRST participation. First, our outreach program increases awareness and interest in FIRST programs. Second, our partnership program obtains support for FIRST programs from education, business, and political leaders. Third, our initiatives build the infrastructure required to develop and sustain FIRST teams. Our entire program is devoted to giving every student the opportunity to participate in FIRST.

We continuously reexamine our program to identify the reasons for our successes and the causes of our failures. Overall, our analysis continues to show we are heading in the right direction and our strategy includes the right elements.

Our outreach program has expanded to over 40 events each year. It is designed to reach a diversified audience, including women and ethnic minorities. Our program has effectively increased FIRST awareness and interest. We have received continuous press coverage for the last 8 years including numerous television and national magazine features

and newspaper articles.

We continue to develop and maintain strong partnerships that ensure the sustainability of our team. Industry sponsorship has increased both in the number of sponsors and dollar value of their support. Currently, we have 22 sponsors supporting our program.

Our network of strategic partnerships has also continued to expand. We have written agreements with both Kennesaw State University and Mercer University and strong relationships with the University System of Georgia, Technical College System of Georgia, and Albany Technical College. Our women's program remains strong through partnerships with Women in Technology and the Girl Scouts of Greater Atlanta. We also have a strong partnership with the 100 Black Men of Atlanta.

We have developed and maintained strong relationships with our political leaders, including the Governor and U.S. Senators and Congressmen. These relationships have helped us move beyond political advocacy to work directly with our political leaders and their staff to expand FIRST opportunities.

Our team has built a strong infrastructure to help develop and sustain other teams. Over 87.5% of the teams we have started still exist. We established a 3,745 square foot innovation center visited by multiple teams each year for advice and training and to work on their robots.

Our efforts to start new FIRST teams have been both frustrating and rewarding!

We have been able to start 24 FRC teams, 16 in the last 5 years and 5 this year, as confirmed by those teams. It has been very rewarding to see these teams succeed (21 are still operating) and the impact it has had on their students. However, we have also been frustrated by our inability to start teams at some schools, including some in our own backyard. Despite our efforts, over 90% of students still do not have the opportunity to participate in FIRST.

So what is the problem?

Root Cause Analysis of the situation was most instructive. Although we had strong partnerships with industry, universities, education, and political leaders, we had not integrated these partnerships to focus on a common problem. They were more than willing to help, but were looking for us to lead them. The few teams we started, that no longer exist, failed because they lost their adult mentor resources. At every school where we were unsuccessful in starting a new team, we were unable to find an adult that was willing and able to devote the time necessary to maintain a successful team.

So where do we get the mentors we need? Although industry provides excellent mentors for FIRST teams, job duties and logistical concerns

make it difficult for most to devote the time needed to serve as head mentors. STEM teachers are in ideal positions to serve as head mentors. However, FIRST programs are not part of the curriculum and are over and above their regular classroom responsibilities. The majority of schools do not provide any resources to support FIRST programs and there is no incentive for the teachers to take on the responsibilities and time obligations of a head mentor. In short, there is a major gap between informal learning programs, like FIRST, and the educational system. In order for every student to have the opportunity to participate in FIRST, we have to close that gap.

How do we solve that problem?

One approach is to treat the robotics program like an athletic event and try to convince educators and politicians to give the same recognition and resources provided to athletic programs, like football, to the robotics program. This approach is being taken with some success in Texas and some other states where they are working to make the robotics program eligible for treatment as a varsity sport.

A second approach is to make robotics an integral part of the education process itself. This approach provides incentives for head mentors similar to those provided to coaches of varsity sports, but makes robotics part of the education system rather than the athletics system.

We chose to pursue the second approach and make robotics an integral part of the educational process. Educators are in a much better position to see the value of FIRST programs and are more likely to provide the attention and support they deserve. We are also in a better position to succeed because we have already developed the relationships with industry, universities, education, and political leaders needed to successfully incorporate FIRST into the educational process. In Georgia, athletics programs are managed primarily by physical education teachers and coaches. Even if we succeeded in making robotics a varsity sport, we are concerned that the leaders of the athletics programs will never give robotics the same attention and support provided to athletic programs like football.

Last year, we developed a roadmap for integrating FIRST into education. We formed a task force, consisting of representatives from the Lt. Governor's office, Governor's Office of Economic Development, the Technical College System of Georgia, Kennesaw State University, and the University System of Georgia, to assess the viability of the roadmap.

This year, we have continued that effort, refining the roadmap into a detailed model for 21st century education that incorporates FIRST directly into the education process. We continue to work with our task force to develop implementation strategies. Our model connects industry, universities and technical colleges, K-12 education, and government to change our current system of education to better meet 21st Century career needs. To ensure the essential government

support needed, our model emphasizes the increase in economic growth that would be achieved as well as the educational benefits. It makes informal learning programs, such as FIRST, an integral part of the education process, allowing teachers to use real world applications instead of just "teaching to the test." Our model provides for:

- New engineering and computer technology education degrees. The degrees are designed to increase the number of teachers qualified to teach engineering and technical courses in high schools and includes exposure of those teachers to FIRST programs and real life manufacturing, engineering, and computer technology.
- Regional manufacturing support centers to support FIRST teams.
- Broad implementation of GaDOE recommended K-12 Engineering, Technology, and Computer Science Courses.
- STEM Gyms in every high school.
- Dedicated STEM Coaches/Mentors with incentives.
- A direct link between universities and technical colleges and FIRST, with universities sponsoring all district competitions.

We are already seeing significant progress toward the implementation of our model in Georgia. So far:

- We have submitted a proposal for a new STEM Engineering Education degree to Kennesaw State University (KSU). KSU is advancing our proposed degree program for review and approval based on our recommendations.
- KSU has developed a manufacturing support center, allowing informal STEM learning programs to use existing facilities including classrooms and manufacturing equipment. This center serves as the model for other support centers in Georgia. At our request, KSU purchased \$160,000 of manufacturing equipment and made it available for all Georgia FRC and FTC teams.
- We developed architectural concept designs for STEM Gyms that are being reviewed by school districts for future construction.
- All 2016 Georgia District Events are hosted by Georgia Universities and Technical Colleges.
- We have started FRC teams at two College and Career Academies this year that will serve as pilots for the rest of the system.
- Kell Robotics met with the Governor's policy advisers to discuss how our new education model fits into the Governor's High Demand Career Initiative.

-We have had multiple meetings with KSU, the Lt. Governor's office, the University System of Georgia, the Technical College System of Georgia, county school superintendents, and the Georgia Department of Economic Development to discuss our model and the best way to implement it.

Once we have proven our model in Georgia, we plan to expand it nationally. We have set a goal for every student to be able to participate in FIRST. Providing opportunity is what defines our team and what we hope other teams will emulate. We keep FIRST in Our Hearts!

**Impact from Inception Essay**

In the 13 years since our team started, we have successfully demonstrated FIRST public value, established credibility, and earned the respect of our political, educational, and business leaders. Going beyond advocacy, we are driving initiatives to change the face of STEM education, creating a new 21st century education model that will provide equitable access to STEM learning and FIRST programs for all. Our efforts will help ensure we have the qualified engineers critically needed in the future.

Danielle Newman



- Certified By
- Video
- Picture 1



Picture 2



Picture 3





Picture 4



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