

## ***FIRST* Impact Award - Team 4188**

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| <b>2024 - Team 4188</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Team Number</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>4188</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Team Nickname</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Columbus Space Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Team Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Columbus, GA - USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in <i>FIRST</i> programs as mentors/sponsors.</b></p>                                                                                                                                                                                                                                     |
| <p>In the past 3 years, 100% of FRC 4188 students have graduated from high school. Approximately half are 1st generation college students, with all pursuing degrees in STEAM fields (graphic design, engineering, computer science, etc.). Our students remain connected to FIRST - 5 alumni have returned to mentor FRC 4188; others actively volunteer at FRC and FTC competitions as pit administrators, announcers, and greeters. One CSP alumni continues to mentor his FLL team, even though he is in college.</p> |
| <p><b>Describe your community along with how your team addresses its unique opportunities and circumstances.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>As the only FRC team in a 90-mile radius, CSP is a FIRST leader in our community. This year we partnered with Columbus State University to co-host 2 FLL tournaments. We ran practice fields, assisted with awards, and oversaw queuing. We also hosted an FLL scrimmage at our facility, with 10+ teams. In our Title-1 School district, teams do not have as many resources. We partnered with CSU to lead an FLL expo for these teams to showcase their Lego creations without the expenses of competing.</p>       |
| <p><b>Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?</b></p>                                                                                                                                                                                                                                                                                                        |
| <p>Our team has expanded our online and offline efforts to reach the community by providing accessible short video tips, highlighting women in STEM, and providing step-by-step CAD with Connor videos for rookie teams within FIRST. Online, our team is creating a trend of engagement, recently reaching 5,000 views per video, with each view lasting 7 seconds. We've reached over 1.9k people per month on Instagram through these initiatives. Offline, we spread FIRST's message at schools' STEAM days.</p>      |
| <p><b>Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.</b></p>                                                                                                                                                                                                                                                                                                                                                                  |
| <p>Whether it be through volunteering at FLL tournaments or inviting FLL teams to our facility, our members have had plenty of opportunities to serve as role models. During an FLL tournament, members were in</p>                                                                                                                                                                                                                                                                                                       |

charge of practice and pit stations but also judging presentations. We also showcased our robot to inspire future generations of students to continue pursuing STEAM. While hosting our FLL scrimmage, we coached teams that had no code to being able to complete a mission by the end of the day.

**Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.**

This year, we expanded our FIRST initiatives by co-hosting 2 FLL regional competitions and hosting FLL and FTC practices at our facilities, including workshops in programming, robot design, innovation projects, and mock judges interviews. We host Mentor Tuesdays - virtual gatherings where FLL/FTC mentors in our community receive support. In the last 3 years, we started and mentored 8 FTC teams, and mentored 10 FLL and 2 FRC teams, guiding rookies through design, manufacturing, and programming.

**Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?**

Through initiatives such as Build Brave Girls, we've reached 5,000+ people in the past two years. We spotlight female leaders on robotics teams to encourage other girls to become leaders in STEM. 100% of the graduating CSP women in the past 3 years have gone into a STEM field after high school. Through our #PCHSpotlightAGirl Program, we've spotlighted 200+ women in two years. We are also a #FIRSTLikeAGirl ambassador and reach thousands of women in STEM yearly, inspiring the future of STEM.

**Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years**

As the only FRC team in our city, CSP aims to create strong relationships with local institutions. Coordinating with our school district's JROTC program, we led STEM camps to help 50+ high school students learn about robotics, hosting over 40 hours of CAD, Programming, and Mechanical Training at our workspace. We partnered with local elementary schools to host STEAM Expos for students. With Columbus State University and Coca-Cola Space Science Center, we co-hosted FLL competitions and practices.

**Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.**

CSP started several initiatives with our local Salvation Army and community house in order to expand STEAM to lower income communities, reaching over 100 students from ages 5-12 with activities like block programming, flying drones, and building robots. CSP also partners with our high school's special education program, to bring STEAM and FIRST values to students through science experiments, arts and crafts, and Lego robotics. Our initiatives strive to make STEAM more accessible and inclusive.

**Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future**

Our team has been able to make a pipeline to ensure current and future team members carry out our initiatives. Several alumni have returned as mentors, not only helping our team with robot design, manufacturing, coding, etc. They also coach our team on continuing FIRST and STEAM outreach

initiatives in our community. To attract new members, our team showcases our robot at STEAM days in local schools, corporations, and after-school programs in our community.

**Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years**

To express our gratitude to our sponsors, we extend invitations for tours of our STEAM facility. Notably, Pratt and Whitney, one sponsor, invited us to showcase our robot and promote FIRST at a family day. Also strengthening team unity and local businesses, we've organized numerous spirit nights at restaurants. Sponsors receive regular updates on how their support benefits our team and community, and we annually host an appreciation day, gathering 15+ sponsors to conclude each season.

**Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.**

Our team has made strides to make our facility safer. During the off-season, we assigned more than 50 students to tidy rooms and also hang safety guidelines for each room. Additionally, we focused on cleaning our machine room to ensure that our machines functioned properly and reduce the risk of malfunctions. Our mentors also went through OSHA certification to make sure all workplace guidelines are met, whether it be through storing chemical products safely or getting rid of outdated equipment.

**Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.**

Last year our team's mission was to make FIRST and STEAM more accessible. We expanded access to FLL/FTC resources and mentoring by hosting workshops and scrimmages at our facility and mentoring teams at their schools. We expanded access to STEAM by leading science, art, and social activities in the Ready for Life program, which serves special needs students at our school. We also led summer STEAM camps for low-income families. Overall, we reached 100+ students and made special relationships.

**Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.**

On January 21, 2024, the FLL/FTC teams we mentor were competing in 2 different towns, and our FRC team was busy with build season. Our FLL/FTC teams needed us, but how could CSP 4188 be at 3 places on a single day? By carefully selecting mentors and members to accompany our FLL and FTC teams at their competitions, we were able to keep our mentoring commitments and cheer on our young peers while other team members were dedicated to maintaining our FRC robot design and field construction goals.

**Judge Feedback**

| Who/When                              | Feedback                                                                                                                                                                                                                            |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Apr 08,<br>2024<br>11:51:16<br>AM EST | <p><b>This team did not submit the optional question for the judges when entering their submission.</b></p> <p><b>An area the team has an opportunity to improve.</b></p> <p><b>Something that really impressed the judges.</b></p> |

## Essay

While at first glance it might seem as if robotics and “crescendo” are two very different concepts, in actuality, our team - the Columbus Space Program (CSP) - is composed of diverse, creative people who share a common goal, much like the members of a fine-tuned choral ensemble. Situated within a Title-1 school district, our team has seen firsthand that not every student may have the opportunity to participate in a STEAM education; therefore, we have made it our goal to bridge this gap. CSP provides students across our district with access to STEAM through summer robotics camps, art activities, robot expos, and school STEM days. We have also built an ongoing, sustainable support system of FIRST mentors and students - from elementary through high school - creating a “community chorus.” Whether they are in our local area, extended region, or on the other side of the world, these teams can sing their STEAM hearts out with our applause and accompanying support!

### Our FIRST Community Efforts: Setting the Stage

To reach a perfect blend of harmonies within our “community chorus,” CSP understands the importance of supporting fellow FIRST teams. As the only Peachtree District FRC team within a 90-mile radius, we regularly collaborate and communicate with other FRC teams virtually; however, we are not able to engage with them in-person frequently. This geographical challenge has not deterred us from doing outreach.

In the past five years, CSP has started a total of 4 FTC teams, mentored 8 FTC teams, and mentored 10 FLL Teams every week. All members of our FRC team have participated in FLL and/or FTC, and we are passionate about making FIRST inclusive by providing technical and programming assistance as well as teaching young students about the Core Values. Our DE field program, where we host a full FRC field, an FTC field, and two FLL fields, has allowed us to mentor and assist several teams. In the past 2 years, we shared our competition fields, 3-D printing shop, and full machine shop with our local FTC teams regularly. These teams collected numerous awards, including the Motivate, Think, and Connect Awards, as well as an FTC team being a semi-finalist at the super regional competition in 2023. This year, two teams we mentor (22327 and 24210) qualified for the FTC State Championship. CSP has also assisted over 30+ FLL teams through scrimmages, workshops, and competitions. Our team developed an innovative way to mentor FLL coaches. As these coaches are all teachers with busy lives and often little background knowledge or experience in robotics education, they asked for us to host weekly virtual meetings: Mentor Tuesdays. Each week, CSP mentors and students address FLL coaches' questions, from robot design, to programming, to developing successful innovation projects. As a result of our partnerships with the Coca-Cola Space Science Center and Columbus State University, our FIRST community outreach efforts have expanded even further this year. We co-hosted several events, including our FLL Super-Regional, where we assisted 35 FIRST Lego League teams in the areas of programming, robot design, and awards. CSP volunteers helped teams queue on time, manned the practice tables, and also helped the judges with interviews. We are especially proud of our time mentoring one rookie team from Martin Luther King Elementary School. 2 weeks before their competition this FLL team spent the day at our facility, and their coach said, “This is our first year in this competition, so we were new to this. We took a Saturday and they [CSP] helped us figure out how to code, and how to build, and they showed us how to do the missions. Without them, I don't know who would have done as well as we thought we were going to do. They [CSP] were invaluable.”

### STEAM Symphony in the Valley

For CSP, STEAM education is like a catchy melody - Something fun we feel compelled to share widely. We spread STEAM education across the Chattahoochee Valley through programs such as our annual summer camps, STEAM expos, workshops, and presentations, which are all directed toward different age groups. Our summer camps focus on high school students, teaching them the basics of engineering-based skills. This past summer, we partnered with our district's JROTC program to teach 60+ high school JROTC students machining, CADing, and programming. They could then apply these skills creatively to solve problems, utilizing their newly acquired STEAM skills to build race cars, fly drones, and build and program their own FTC robot.

Among younger students, we have hosted and assisted with STEAM days and expos. One of the most notable expos was our district's STEAM showcase. Elementary students who did not have the time or resources to participate in a FIRST Lego League season were given the opportunity to build a robot that solves a challenge of their creation. Over 30 schools participated in this showcase, giving students an opportunity to express their creativity through art and technology. Seeing the joy among elementary students who participated in the district's STEAM showcase, CSP sought more community partnerships to further spread STEAM education among low-income families. This led us to partner with Open Door and Salvation Army, where we have facilitated mini STEAM camps to elementary and middle school-aged children. We taught students programming with a simplified graphical interface of Java, basic mechanical and design skills using LEGOs, and drew their own button designs. Students also got to do the Coke and Mentos experiment! Through this endeavor, we were able to spread STEAM to children who may not otherwise have access to such initiatives. Our most recent outreach effort focuses on a special group of students in our own school: Columbus High School's Ready for Life Program. This program provides academic learning and personal enrichment to students with special needs. Noticing the need for more STEAM activities in this program, several CSP members developed engaging and creative ways to make learning accessible and fun. For example, in November, CSP students introduced Ready For Life students to sustainable wind energy by creating windmills, unleashing the artistic side within them. Amplifying Our Efforts: Social Media Reach

When we sing loud and proud for all to hear, oftentimes, another push is needed to ensure that everyone, even those from afar, can hear the lyrics, rhythms, and harmonies we work so hard to perfect. To amplify our efforts, we utilize the tools of modern-day technology. One of our biggest efforts is exemplified in our Build Brave Girls program. Inspired by Reshma Saujani -the founder of Girls Who Code- CSP developed another initiative focused on inclusivity: Build Brave Girls. In her 2016 TED Talk, Saujani stated, "We're raising our girls to be perfect, and we're raising our boys to be brave." Build Brave Girls is determined to change this mindset and inspire girls to be brave within FIRST and STEM fields in general. Our Build Brave Girls social media platform spotlights females on our team, highlights what inspires these leaders, and gives advice on how to engage with robotics and FIRST. Since Build Brave Girls was founded, we have created over 40 of these spotlights and have spotlighted over 250 girls from 40 different Peachtree District teams. By doing so, we have reached over 10,000 people in one year, the majority of whom are female. Build Brave Girls has also partnered with the #FIRSTLikeAGirl Organization, with CSP being the only #FIRSTLikeAGirl Ambassador in the state of Georgia.

Another program that CSP has created to amplify our reach beyond the local community is our Tip of the Week Program. This program showcases tips for FIRST teams every week: whether it be advice for preparing for awards or ideas regarding pit safety. These short, 30-second, tip videos have gathered over 20,000 views total, with interactions averaging 50-150 likes. Utilizing this program, we aim to level the playing field among FIRST teams and ensure that the resources needed to succeed, such as

programming, design, and awards support, are all easily available to any team that needs them.

Due to our social media reach, several teams have reached out seeking assistance. A rookie team from Turkey, FRC 9041, reached out through Instagram, asking for help. We led a 2-hour webinar describing FIRST's Core Values, the competition itself, and the basics of developing a robot design. We led a similar webinar for a student looking to start an FRC team in Nigeria, although this initiative will not be able to take place this year. On top of these teams, FTC team 12116 from New Jersey asked us to mentor them through Discord. We developed a 6-person mentoring team with CSP students specializing in design, manufacturing, programming, electrical, and awards to support the team during their season. FTC 12116 won the Design Award at their district event and qualified for their upcoming state competition. As a result of our social media reach, we were able to level the playing field for so many teams across the world, making them a part of the ever-growing community chorus.

Conclusion,

In all, we've created a community that levels the playing field for all people within our community and worldwide, ensuring that every child has an opportunity to learn about STEAM, despite whatever difficulties lie in their path. Together, our community chorus's diverse blend of voices can provide a new, unified voice for STEAM education in the Chattahoochee Valley and beyond. ;

