

## **FIRST Impact Award - Team 3489**

<b>2024 - Team 3489</b>
<b>Team Number</b>
<b>3489</b>
<b>Team Nickname</b>
Category 5
<b>Team Location</b>
Summerville, SC - USA
<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>
Cat 5 has a 100% graduation rate with alumni continuing to: -Enroll in various universities across the country like Kettering, University of Florida, Clemson, University of South Carolina, Charleston Southern University, etc. -Intern at Boeing, Bosch, Thorne, NIWC, Blanchard Machinery, US Armed Forces, and other industry partners Our alumni mentorship increased by 100% with the return of former members, bringing back invaluable knowledge.
<b>Describe your community along with how your team addresses its unique opportunities and circumstances.</b>
Cat 5 is a diverse community team with students from 5 schools, fostering an inclusive learning environment. Our students facilitated opportunities for the team to utilize facilities and build connections with district leadership, alumni, and school administrators, enabling us to support educators in implementing FIRST in their classrooms. Additionally, we organized and managed Tropical STEM Fest at Nexton Elementary, providing an event for 150+ classpack students to exhibit their achievements.
<b>Describe the team's methods, with emphasis on the past 3 years, for spreading the <i>FIRST</i> message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?</b>
Cat 5 uses three strategies to impact our community through FIRST: -Reaching people through a strong social media presence: Instagram, TikTok, Facebook, and YouTube -Hosting and volunteering at STEM Events, FLL/FTC competitions, camps, etc. -Repurposing a trailer to house and transport outreach activities/materials These all allow us to sustain our efforts through the FIRST pipeline; the cross-program involvement helps actively develop the next generation while also sustaining our team.
<b>Please provide specific examples of how your team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years.</b>
Cat 5 acts as role models in many ways: -Established the FIRST South Carolina Youth Advisory Council to provide a voice for students; its bylaws will be a foundation for FIRST headquarters to develop youth leadership -Supports FIRST events across all programs, volunteering for key roles -Mentor 17 FIRST

teams -Remain connected with our local businesses such as CEMS Engineering Firm and Coastal Coffee Roasters From this, Cat 5 gained a reputation for being consistent and reliable

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

Cat 5 holds FIRST in high regard, establishing connections across the Lowcountry of SC through: - Mentoring 2 and coaching 2 FLL Explore teams -Mentoring 14 FLL Challenge teams -Pipeline implementation by starting 2 FTC and coaching 1 -Delegating team members to the teams we coach/mentor, ensuring we have maximum impact -Classpacks, we are impacting 1280+ students; equivalent to 208+ teams This allows for a consistent presence across the FIRST pipeline.

**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?**

We believe that classroom resources are crucial to inspire the future: -Provided teachers with STEM kits with various lessons showcasing force, motion, friction, and electricity -Implementation of our STEM on-the-Go trailer, bringing opportunities to our underserved communities -Presented workshops: 3 at FLL and 2 at FTC kickoffs, 1 at the Peachtree Georgia Symposium -Hosted and ran week-long FIRST camps; 1 FLL Explore, 1 FLL Challenge, 1 FTC

**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**

Our closest connection is with Young Scientists of South Carolina, who help us drive STEM accessibility in as many communities as possible. They aid in the accomplishment of our community initiatives, like funding the STEM on the Go trailer. Cat 5 builds strong relations with school districts, such as Dorchester District 2 and Colleton County; we have hosted various STEM events and continue to implement 100 classpacks

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

Cat 5 strives to create a fun and safe learning environment for all team members; we did this by: - Ensuring ALL members (students and mentors) completed the FIRST ED&I training -Participated as a Ladies in FIRST member -Volunteered at girl empowerment events -Worked to provide free menstrual products at events through partnerships with FIRST SC and FRC 1868 -Joined STEM on the Spectrum and Autism Understanding Through Outreach -Creating and distributing 50+ fidget kits at 2024 FIRST events

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

We use 3-5-year plans for each initiative in order to outline the future steps needed for the team to sustain them. We are working with our local legislators to continue the implementation and funding of our initiatives. Additionally, we use our 6-division student leadership system and "senior shadow" program to encourage student mentorship, allowing for the transfer of knowledge and for students to become invested and continue the initiatives even after the original students graduated.

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

We hold sponsor relations in the highest regard; Cat 5: -Tracks student involvement with yearly spreadsheet -Encourages students to gain sponsorships through our student fee structure -Students grant write, bringing in \$35k+ -Through the development of a strategic marketing plan, we identify businesses that align to our mission and ensure they are recognized through social and website shout outs -Invites them to outreach events and to tour our workspace to demonstrate their impact on the team

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

Cat 5 diversified student outreach by implementing a new incentivized participation system. Members were charged a \$1500 fee, which was covered through outreach and fundraising. Each outreach hour chipped \$15 from the fee, and the value of sponsorships and donations brought in was also deducted. As a result, student participation increased by 150%, bringing in \$10k+ in sponsorships, \$6k+ in fundraising, and a 93% increase in outreach hours.

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

One goal is to strengthen our pipeline. For example, an initiative that executes this is "Project Tropical Storm." We were awarded the LEGO Education Foundation grant and regrant, which we are using to distribute classpacks: -20 SteamParks -80 Discover -16 Explore -3 Challenge -1 FTC These have been introduced in underserved districts like Allendale, Bamberg, Colleton, etc. Moving forward, we aim to expand our programs to additional schools beyond our local community.

**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.**

Cat 5 understands that building a sustainable pipeline and promoting equal access begins with introducing robotics to the classroom, especially in underserved areas. Our FLL and FTC classpacks provide educators and facilitators with the essential curriculum to lead students through 12 sessions centered on STEM and robotics, fostering creative problem-solving related to the season theme. Each classpack comprises session guides, robot kits, season materials, and professional development resources.

**Judge Feedback**

Who/When	Feedback
Apr 08, 2024 11:49:10 AM EST  <b>Essay</b>	<p><b>What is something in our essay or executive summary that could be better represented in our presentation?</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>

## STORM'S A BREWIN'

Team 3489: Category 5 (Cat 5) was established in 2010 with a mission to inspire younger generations by spreading STEM while promoting Equality, Diversity, and Inclusion (ED&I) along with Gracious Professionalism throughout South Carolina. By engaging all members in community initiatives, we have amassed 7700+ man-hours over the last 3 years, collaborating with local and FIRST communities. Through interactive activities at community events, Cat 5 has demonstrated that STEM can be fun for everyone, reaching 270k+ people.

## MAKING LANDFALL

Cat 5 maintains relationships in our community and with sponsors. Young Scientists of South Carolina, a non-profit, continues to be one of our strongest relationships as they support us in a variety of ways: providing insurance, helping fundraise, and providing project funding. We also make an effort to uphold relations with surrounding school districts. In Dorchester District 2, we work out of Summerville High School (SHS), host FLL qualifiers at SHS and Ashley Ridge High School, and mentor various district FLL teams. For the past 11 years, Cat 5 partnered with Colleton County School District (CCSD) to host and run the Ace Basin Qualifier. From this partnership, we were able to start and mentor their first FTC teams. To extend the learning experience beyond students, we have supported FIRST's education Professional Development (PD) team by training 30+ teachers.

The magnitude of Cat 5's outreach would not be possible without our sponsors. Team 3489 has obtained various sponsors, from corporations like Boeing and Naval Information Warfare Center to local businesses like CEMS Engineering and Coastal Coffee Roasters. For others like NASA, REV Robotics, Gene Haas Foundation, LEGO Foundation, Kettering, and others, sponsorships are attained through student-written grants, bringing in over \$35k. We maintain relationships with sponsors through emails, social media, press releases, and work with them at outreach events.

Category 5 has been actively improving our social media engagement by creating numerous media initiatives: weekly vlogs, participation in Community FIRST Day, and collaborations with other FRC teams, FIRST SC, Haas, and REV. Over the last 3 months, we have seen a 94% increase in accounts reached and a 35% increase in engagement on our Instagram. On YouTube, we have seen a 10.3k increase in views. This allowed our social media campaign to flourish and raised over \$20k.

## WINDS OF CHANGE

Cat 5 is building the future generation through FIRST and STEM awareness. We ensure to maintain an active community presence through our outreach, mentorship, and advocacy.

We place heavy emphasis on FIRST outreach, working across all programs in the FIRST pipeline. Students play key roles at numerous events, working with students to inspire them to continue their journey through the FIRST pipeline and beyond. Members of our team have supported over 25 FLL events, 10 of which we hosted, as well as supporting 4 FTC, and 3 FRC.

During the summer, we hosted and ran 3 Storm Chaser camps to support students entering FLL Explore, FLL Challenge, and FTC programs. These camps integrated NASA-astro camp lessons and provided an immersive experience in coding, STEM activities, and FIRST core values. Additionally, we supported 2

STEM camps and 6 FIRST camps, impacting 250+ students.

Our team goes beyond FIRST outreach by actively promoting STEM awareness in our community. We showcased our competition robot, demonstrated STEM kits and ambassador robots: Hugo, St. Elmo, Romi Robots, and Tempest, at events such as the Air Show at Joint Base Charleston, Collin's Aerospace, and Flowertown festival.

We also acknowledge that it is essential to provide guidance and resources to teams, especially those of the younger programs. Through mentorship across the pipeline, we are able to provide each team with the specialized support needed for success. Within FLL Explore, we mentored 2 teams and coached 2 others. In FLL Challenge, we mentor 14 teams. For FTC, we started 2 teams in underserved communities like CCSD, who we still mentor and coach.

Category 5 noticed that FIRST students often felt as if their voices were not being heard by FIRST SC leadership. To help resolve this issue, our students established the FIRST South Carolina Youth Advisory Council (YAC) in order to advocate for students across the state and ensure they felt represented. The YAC became the first student-run Career and Technical Student Organization in FIRST. Due to its successful establishment, we were given the opportunity to present at the 2022 and 2023 FIRST World Championships and FIRST Community Conference regarding the development of youth leadership in FIRST. This gained the attention of FIRST Headquarters, who are now planning to emulate the YAC's by-laws to establish councils in 15 other states.

## BACKYARD AND BEYOND

Category 5 works to continue broadening our cone of impact; we emphasize how we can influence beyond our local communities and created initiatives to reach our goals.

### 1. Project Tropical Storm

Our Project Tropical Storm initiative aims to strengthen the FIRST pipeline, we addressed the lack of FLL Explore/Discover opportunities in many elementary and middle schools. This led Cat 5 to write for a LEGO Foundation grant and regrant, resulting in the acquisition of 100 class packs: 1 FTC, 3 FLL Challenge, 16 FLL Explore, and 80 FLL Discover, along with 20 SteamParks. This has an implementation cost of over \$200K.

Using classpacks, our team was able to work closely with 21 schools across 8 school districts to help champion FIRST into their classrooms and provide guidance to teachers and students through camps and PD in underrepresented districts. With these classpacks, Cat 5 has been able to bring FIRST to communities with a lack of programs, like Allendale and Bamberg counties.

In order to provide an opportunity where students could showcase what they learned through the classpacks, we partnered with Nexton Elementary to host our Tropical STEM Festival for 150+ classpack kids last year. We have plans in April 2024 to host for a 2nd year.

In implemented schools, the classpacks are rotating through classes, pushing its impact even further. The project can impact 1280+ kids this year alone, which is equivalent to 208+ FLL teams, and will only continue to grow!

## 2. Educational Resources

Our team strongly believes that STEM should start in the classroom. To support our educators, we've created various resources, including STEM kits. Funded by the FIRST ED&I grant, these kits are equipped with activities like binary bracelets, popsicle catapults, and playdough circuits.

Our team facilitates workshops across the pipeline in order to encourage the development of new skills. This includes presenting at the Peachtree Georgia Symposium regarding the development of a complete FIRST Ecosystem and hosting workshops at FTC and FLL Kickoff for 3 years. We ran all 3 workshops available at FLL Kickoff this year.

To align with our mission, Cat 5 is collaborating with the South Carolina Center of Assistive Technology and Educational Research to enhance the inclusivity of our classpack resources by aiming to foster inclusive educational practices and provide tools for educators to create an accessible learning environment for all. Through this collaboration, the center will be critical in developing tailored resources for students, with goals to empower educators using these modified classpacks. 3.ED&I Awareness

We recognize that STEM and FIRST may not always be accessible to neurodiverse students. To increase awareness, Cat 5 joined Autism Understanding Through Outreach and STEM on the Spectrum. Through these partnerships, we hope to foster a more welcoming community. We also plan on creating and distributing 50+ fidget toy kits at FRC competitions.

Members of our team volunteered at numerous events promoting female participation in STEM: Girl Powered and STEMINIST Girls Camp. We also partnered with Ladies in FIRST to promote girls in STEM. Other partnerships include FRC 1868 on their Menstrual Equity Initiative and FIRST SC on their Menstrual Products Initiative to guarantee access to free menstrual products at SC FIRST events.

Creating a comfortable and safe learning environment for all is a priority for our team. As part of this commitment, all members, including mentors, are mandated to complete FIRST ED&I and Safety training, highlighting the importance of inclusivity and safety within our team.

## SURGING AHEAD

Category 5 is looking to the future and actively planning for how we can surge ahead and continue ramping up our impact. To ensure success, we are expanding our educational resources by developing additional FLL curriculum to complement our classpacks. This is crucial to sustain and enhance our educational initiatives.

We plan to finalize our STEM on the Go Trailer initiative, a mobile outreach trailer with STEM activities, tools, educational demo bots, a lending robot closet, and our ambassador robots. Implementing the trailer will allow us to bring opportunities to underserved areas, expanding our reach.

Our latest initiative, the Marvin Project, aligns with our mission to support educators throughout SC by advocating for the implementation of a bill similar to those in Michigan and Indiana. These bills allocate millions in state funding to support competitive robotics programs and provide stipends for educators who support competitive STEM teams. We collaborate with local legislative delegates like Mayor Russ

Touchberry and District 100 Rep. Celeste Davis to actively advocate for the adoption of this bill and enhance opportunities across the state to grow FIRST Teams in South Carolina.

We are the winds of change, making landfall in our backyard and beyond! We are Category 5! We are FIRST! ;

