

FIRST Impact Award - Team 2468

2024 - Team 2468
Team Number
2468
Team Nickname
Team Appreciate
Team Location
Austin, TX - USA
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.
All 108 seniors over the past 3 years have graduated high school, and all 23 of this year's graduates will pursue STEM majors. In the past 3 years, 23 of our teammates completed internships at companies like NASA, NVIDIA, Aptronik, and Apple even BEFORE starting college. These opportunities lead our alumni to work at companies like SpaceX, NASA, Apple, Meta, and REV. 8 of our alumni continue promoting the core values of FIRST as mentors, and others return to FIRST as judges and volunteers.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Austin is a tech hub, so we work with local tech companies and nonprofits like WESTA (Westlake & Eanes Science & Technology Association) to garner support for STEM programs. This year, we've raised \$102K through fundraising pitches to sponsors and student-taught summer camps at sponsors' facilities. By sharing access to our competition field, manufacturing parts for local teams, and hosting scrimmages for all levels of FIRST, we use our resources to improve the FIRST experience for all.
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?
Effective initiatives start small. Our after-school FLL 4 ALL program started in 2023 as a 5-week pilot with 18 students and 3 teachers and evolved into an 8-week season with 112 students and 15 teachers. Our metric of success is the long-term sustainability and continued impact of our programs: by guiding students through an FLL season and training teachers to bring FLL to their classrooms, we ensure that both students and teachers are equipped to maintain long-term involvement in FIRST.
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.
Role models lead by example and share their knowledge. Our students led 12 presentations on technical and outreach topics to 188 attendees at a Kickoff event last year, introduced 1K+ students to FIRST Signing Day (FSD) at our student-led booth at Champs for 2 consecutive years, and created 50+ posts

for FIRST's official TikTok account, including how-to videos on technical topics. Our "Appreciator" team at tournaments is devoted to assisting teams with wiring, programming, and robot repair.

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

In the past 3 years, we've started 50+ FLL teams. We mentor 4 FRC (2687, 2689, 8819, & 9577), 2 FTC (3781 & 5628), and 4 FLL (30842, 57029, 60149, & 62022) teams in-house, supporting their design, programming, and outreach. In 2023, we established KoPilot, a mentor support network for rookie FIRST teams. Through 30+ ZOOM meetings, we've presented on topics ranging from electronics and programming to creating sustainable robotics programs, supporting 9 rookie teams from Mississippi and Louisiana.

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 host EV3 and Sphero workshops at our district's annual STEAM Days and organize summer camps on topics like programming and design, engaging 1100+ elementary students in 3 years. We present at elementary school Back to School Nights and middle school classes, inspiring 1000+ students to take part in STEM by increasing awareness of FIRST. These initiatives build a pipeline to future FIRST involvement, with nearly half of our current members saying that their STEM journeys began at these events.

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

With nonprofit WESTA, we funded our after-school FLL 4 ALL program including paid training for teachers. We worked with FIRST HQ to lead a FSD social media campaign that received 76K+ impressions in 2023 alone, celebrating a new generation of innovators worldwide. In the past 3 years, we've presented about our female-focused outreach at the University of Texas' Women and Girls in STEM Summit to 300+ attendees. These key partnerships amplify our outreach beyond what we can achieve on our own.

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

We work to create an environment where ALL are welcome. In a school that's two-thirds white, our team is 75% minority. As a result of our focus on female engagement, 60% of our team and two-thirds of our leaders are female. Our STEMGirls events have empowered 350+ 3rd-8th grade girls with hands-on STEM experiences and shown them that they belong in STEM. We've introduced 30+ special education students to robotics through FIRST Access and met increased demand by expanding our curriculum.

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

By creating 2 new FRC teams at our school (2689 & 2687), we guarantee a sustainable pipeline to 2468. The progression of these 3 teams ensures that students are prepared to run our initiatives and train younger students once they have reached 2468. 2468 students mentor 2689 and 2687 at weekly

offseason meetings, developing a base of institutional knowledge that lasts beyond a single generation of 2468 seniors. The success of our model has solidified our commitment to peer-to-peer mentoring.

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

We maintain relationships with each of our 23 sponsors for 5+ years through individual visits and follow-ups conducted by our Pitch/Fundraising team. We've given 30+ tours of our facility to sponsors, district managers, and community leaders. 30 sponsors and alumni attended our Sponsor Night to see firsthand the impact of their support. We engage our sponsors by hosting summer camps for employees' children, strengthening our partnership while introducing 139 of their children to robotics.

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

Even though we're STEM leaders in our community, we want to expand the impact of our programs. Currently, our KoPilot initiative connects veteran teams to rookie team mentors across the US, but we know we can do more to support rookies by also connecting students from across teams. Next year's plan is to open KoPilot calls to both rookie mentors and students, providing individual guidance to all who need it and fostering sustainable relationships between students across the FIRST community.

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

To make STEM education accessible in TX, we founded SACOT (STEM Advocacy Conference of TX). We have advocated for STEM education bills such as HB 1569, which would provide grants to train computer science teachers across TX. Just last year, we hosted a record 54 meetings with legislators and invited FIRST teams to advocate with us. Through SACOT, we systematically break down barriers to STEM access for all students, allowing them to gain the skills and confidence to build a better world.

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.

13 of our students hold 25 SolidWorks certifications, and we encourage them to apply technical skills beyond FIRST. Our Programming Co-lead, Catherine, created rechargeable solar-powered lights as an emergency light source in the wake of power grid shutdowns in TX. Finn designed tactile pieces with modular handle tips to help a girl with sensory loss better communicate. Jolyn soldered a wearable device that uses physical and visual feedback to alert hearing-impaired users of sounds around them.

Judge Feedback

Who/When

Feedback

Apr 05,
2024
05:43:31
PM EST

Do you see any gaps in our outreach that we should focus more of our efforts on in order to increase our impact?

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

FRC 2468 Team Appreciate is on a quest to change the world with STEM. Changing the world is a task far bigger than any one team, so we involve as many people with different perspectives as possible to join our mission. To truly save the world with STEM, we need a crew larger than 2468: we need to inspire future generations of students everywhere.

With the explosive growth of our team over the past few years, we had a problem: we needed to give more students—rookies and veterans alike—hands-on opportunities to build a robot in their first year, so we created 2 new FRC teams: 2687 and 2689. In our program, student leaders on 2468 mentor members of 2687 and 2689 in the offseason, preparing them for their own FRC seasons. 2689 is a first-year-student team that provides an opportunity for new members to join robotics and learn from more experienced 2468 members while 2687 connects the other 2 teams, developing students' leadership skills all under the guidance of 2468. Our model creates a pipeline to 2468 as students progress through the 3 teams, which we guide on a mission to expand STEM access.

2468 uses our resources to empower the entire FIRST community with the help of our partnership with nonprofit WESTA (Westlake & Eanes Science & Technology Association). WESTA began as a partner organization that bridges our team to our school district and supports STEM education within our community. We partner with WESTA to fund our programs through a combination of student-led pitching and fundraising, community donations, and student-generated revenue sources like paid summer camps taught by 2468 students, all of which pave the way for funding our outreach.

This year, we identified 5 key challenges within our community: expanding FLL participation, empowering girls in robotics, creating an inclusive community for special education students, improving the retention of rookie teams, and generating excitement about STEM.

EXPANDING FLL

Our first goal is to expand FLL to all elementary schools in our district. We started FLL 4 ALL, expanding FIRST's Class Pack resources to create an 8-week FLL competition season culminating in our own tournament open to all 2nd-4th graders in our district. Our 35 members dedicated a total of 720 hours to guiding 112 students through an FLL season and recruited teachers from each elementary school to our sessions to train them on how to implement FLL in their own classrooms. We pitched our idea for FLL 4 ALL to WESTA, securing a grant of \$51K to purchase LEGO kits and FLL Class Packs while guaranteeing stipends for the 15 participating teachers. We donated the LEGO kits to our district's elementary schools so that teachers could introduce their own students to robotics. FLL 4 ALL teachers are staying involved in FIRST, with teachers already hosting after-school activities based on their FLL 4 ALL experience and planning robotics summer programs. Jamie Berriose, one participating FLL 4 ALL teacher, said she "gained a lot of confidence in [her] own abilities to lead students in programming [LEGO robots] from seeing how it was broken down in each session."

ENGAGING GIRLS

Due to our focus on girls, our team is now 60% female, and all subteams have at least one female student lead. After being contacted by a middle school robotics teacher facing <10% female involvement in her introductory robotics classes, we jumped into action to plan a STEMGirls Night In targeted at middle school girls. At the Night In, we introduced girls to skills like soldering and wiring while sharing our own STEM journeys. We've reached 350+ girls in the past 3 years by ramping up the number of events

we run from annual ice cream socials and MLK Day robotics workshops to monthly STEMGirls Night Ins. These events allow girls to discover a sense of true belonging in technical fields and give them opportunities to develop close connections with peers. To encourage educators to inspire girls in their own communities, we've presented at the University of Texas' annual TX Women and Girls in STEM Summit to 300+ people in the past 3 years. The impact of our outreach to girls is evident even within our own program: one of our female student leads, Gayatri, first encountered 2468 at an MLK Day workshop years ago. She said that a girl on 2468 "broke down the building and programming process into simple steps, cementing the idea that robotics had a place for [her] to belong."

FOSTERING INCLUSION

Through our FIRST Access program, we collaborate with our school's special education department to provide students with disabilities with equal opportunities to participate in STEM. We've expanded the FIRST Access model into a 5 week season each semester where we teach special education students the basics of robotics and create an inclusive community. For the past 2 years, we've organized art-focused FIRST Access seasons with activities like programming a LEGO robot to draw. Our district's Director of Special Education, Matt Zemo, said our outreach to special education students "has created an environment where every child, regardless of background or ability, feels valued and included" and "the inclusivity promoted by FIRST Access extends beyond the robotics arena, fostering a culture of acceptance and understanding that permeates our community at large." We also use technical skills to improve accessibility. We modify toys to make them easier to use for students with disabilities through our Assistive Technology initiative and have presented these toys to 200+ people at the Central TX Best Buddies Friendship Walk, an event focused on supporting inclusion for people with disabilities. Shamika, our senior Design Co-lead, laser cuts vision boards for our school that create a means of communication for students who have trouble communicating. As a result of our focus on inclusivity and accessibility, we now have a FIRST Access member on our team.

INCREASING RETENTION OF ROOKIE TEAMS

We focus on sharing our resources, space, and experience with the entire FIRST community, ensuring that every team has a sustainable path forward. In 2019, our students promoted a district bond that funded a larger robotics facility, giving us space to host 9 FLL events in the past 3 years and support the 2 FRC teams we created, 2 FTC teams, 4 FLL teams, and FRC teams from the local FIRST community, including 9 we've mentored through the Texas Active Rookie Partnership program. This year, to expand our mentoring and specifically combat the >10% loss of rookie teams each season within FIRST, we created a virtual mentor support network, KoPilot. We invited veteran teams FRC 503, 971, 1902, and 3132 to work with us in providing mentors from 9 rookie teams across Mississippi and Louisiana with the resources needed to be successful and sustainable within FIRST. Every KoPilot team follows the model of our first-year student team, Team Alpha, by using a kit robot to lower the barrier of entry for new students. Our students and mentors lead KoPilot calls a minimum of 3 times per week on topics like wiring and programming. We react "just in time" to KoPilot teams seeking dedicated help by providing subject-specific calls, open to all. FRC Chief Robot Inspector Chuck Dickerson, a veteran mentor invited to work with us on KoPilot, said that 2468 has "been the driving force behind the KoPilot mentoring program" that serves as an "invaluable lifeline" for the rookies we mentor. A mentor of rookie team FRC 9405 said that KoPilot "has been instrumental in [their] success," allowing them "to build a very strong foundation from which to build a lasting robotics program for years to come." FIRST Senior Mentor from Mississippi David Fava said that "with the record numbers of rookie teams in [his] region, it would be very

difficult for just [their] veteran teams to provide adequate levels of support” but KoPilot “provide[s] expert guidance and just-in-time support from seasoned FRC mentors to all [their] rookie teams.”

GENERATING EXCITEMENT AROUND STEM

We partner with FIRST HQ to celebrate STEM students everywhere. We started FIRST Signing Day (FSD) to recognize FIRST graduates and encourage them to continue their involvement in STEM beyond high school as alumni, and we’ve recognized 3K+ students. Due to FSD’s success, FIRST became our partner for promoting FSD in 2021. Since then, we’ve worked together with FIRST to host FSD booths at Champs, include FSD on the official FIRST calendar, and share resources on FIRST’s website on how a team can host their own Signing Day. We also created the FSD virtual show, which FIRST Manager of Public Relations Haley Morse said was “the perfect ‘send-off’” for graduating students, both “celebrating (...) and informing audiences about how they can stay connected with FIRST.” As one of just 3 teams asked by FIRST to produce content for the official FIRST TikTok account, we’ve created 50+ robotics-centered posts with a cumulative 370K+ viewers. Our team has also supported STEM ambassador Jay Flores on American Ninja Warrior by demonstrating our robot at the filming, and we were invited to the premiere of FIRST’s More than Robots, organizing a community of Austin teams to support the documentary. FSD and our work on social media excite wide audiences about STEM and help change the world to one where engineers and scientists are celebrated just like athletes and rock stars.

Since 2008, 2468 has spearheaded a movement to change the world with STEM. Our focus on expanding FLL, engaging girls, fostering inclusion, supporting rookies, and generating excitement around STEM has transformed the landscape of STEM access in our community and beyond, empowering students to go out into the world with technical skills and an attitude of helping others with STEM. By engaging as many communities of students, teams, and mentors as possible, we equip wide audiences with the tools they need to use STEM to change the world. ;

