

FIRST Impact Award - Team 3749

2023 - Team 3749
Team Number
3749
Team Nickname
Team Optix
Team Location
San Diego, CA - 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.
The FIRST program has motivated our members to pursue STEM endeavors. 100% of Optix members have graduated high school and 96% have taken up STEM careers in the past years. 90% of our members are either taking or plan to take AP math and science courses in high school. FIRST Networking has provided many of our team's alumni incredible STEM opportunities. Ambar, an Optix alumni, is an aerospace engineering major and is using FIRST skills to build his own High Power Solid rocket.
Describe your community along with how your team addresses its unique opportunities and circumstances.
As a team located in a privileged community with great racial diversity, we've fostered collaboration and inclusion through long-term education partnerships to uplift the neighboring under-privileged communities in our area, partnering with groups like CyberBorn, Coding4Kidz, & Stemality to encourage our members to participate in these mentoring opportunities. We have also partnered with NHS, UNICEF, & SWE to serve the less fortunate, uplifting 1000+ students with 3000+ hours of service.
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?
Optix spreads FIRST's mission of inspiring young people to pursue STEM by reaching 7000+ people through social media and outreach events. We establish lasting partnerships with various STEM-related groups, such as Girls in CS, WiSE, and SWENext. Optix ensures sustainability by continuing our public events every year, such as our annual FLL Mock Competition which we have hosted for 14 years. We're proud to have achieved 3000+ hours of volunteering, inspiring people of all ages and identities.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
Team Optix exhibits FIRST values to inspire other teams in the FIRST community. We host annual mock competitions for 45+ FLL teams, lead showcases for 300+ students at nearby elementary schools, and

mentor 20+ teams, pushing for life-long passion in robotics and engineering. Our team has created our own FRC Java training course that many other teams now incorporate in their training. We also host STEM Fairs to promote and inspire the younger generations to pursue STEM through FIRST.

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 last 3 years, Optix has assisted and mentored 50+ teams. We are also in the process of establishing a FLL Team for the underprivileged kids in urban LA. Of the FLL teams we've mentored, 4 were founded at our local middle school in 2018. We've also mentored FTC team 15171, helping them earn the Judge Award & League Champion Award, FLL team 56458, helping them win the Champion's Finalist award at the Southern California Championship, and FLL team 15142 earn Champion's Award Runner Up.

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?

With increased success for our FTC and FLL teams in competitions, we've reached 27,000+ students across grades K-12 in 4+ continents, 25+ cities, and 30+ schools through virtual workshops, teaching students robotics and arduino, and web development. Providing 100+ hours of instruction and utilizing \$20,000 worth of educational equipment. We hosted multiple workshops, while presenting yearly at the MCC Science Fair, local STEAM Fairs, Navy Fleet Science Week, and San Diego STEM Expo.

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

Since 2020, we have collaborated with 15 school organizations, such as Girls in CS, Arduinos, UNICEF, Society of Women Engineers, and Women in Science and Engineering in order to promote female presence in STEM. Our actions have impacted 900+ young females over a total of 600+ hours. Additionally, we've coordinated with nonprofit organizations such as Corazon de Vida, Interfaith Community Services, and Akshaya Patra to provide resources and educational opportunities to over 2,000+ orphans.

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

We foster diversity, inclusion and equity in our team in many ways, one of which is our Albert's Angels initiative. We stock our classroom with feminine products, host "girl's bonding" days, and have frequent conversations about inclusivity. Almost 50% of our officers are female and 30% of our team is non-male. We also cultivate a space of racial diversity. Our members speak at the Superintendent's Student Advisory Council and advocate for the Equity and Anti-Racism Task Force of our school.

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

This year, we have innovated a new program called the Optix Passion Initiative (OPI) to increase our team impact by encouraging team members to create events they are passionate about. To Optix, supporting events led by our members are vital to the continuity of our team and allow us to magnify our

impact in multiple aspects. Our team has made it a priority to create strong connections with all our new partners through the OPI program to ensure the longevity of our current programs.

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

We maintain connections with our 22 sponsors through monthly press releases, inviting them to our team events, and by featuring them on our robot and merchandise. We have also competed in their challenges, such as the HIP internship (Northrop Grumman). Regularly communicating with the wonderful people at Qualcomm and Viasat helps us to foster stronger bonds between industry leaders and our club. Our long term connections with local businesses help us maximize our impact.

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

With our club increasing in size, our members frequently feel overwhelmed in school and excluded from the club. In 2022, we established the system of OptixBalance, a professional calendar system, in which members can see our schedule and events months into the future, ensuring organization and inclusion. We continue to fight stress through this system's ability to balance free and extracurricular time, and further ensure our members stay in the loop through frequent social media updates.

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

Our community is what builds our team, and as a FIRST team, our top priority is giving back and displaying gracious professionalism. FIRST emphasizes the inspiration of young leaders, which are also Optix's goals. Through the Optix Passion Initiative, all members are encouraged to be leaders and lead their own outreach event. We've impacted 2000+ students and volunteered 1000+ hours in 20+ OPI events. Optix has fostered a team culture where inclusion and learning are valued more than winning.

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.

As an active community member, Optix prioritizes connections within the FIRST community and nonprofits. We have hosted multiple STEM events and invited local FIRST teams to join us. We have partnered with other nonprofits like Corozan De Vida, Akshaya Patra, and UNICEF to provide meals, education, and supplies to children in Africa, India, Mexico, and Pakistan. Our team aims to make an impact on a local and global scale, echoing the mission and values of FIRST internationally.

OUR MISSION

From initial sparks to a strong running current, Team Optix is dedicated to energizing our community with our widespread impact. Beginning with internal team bonding initiatives to various external events, workshops, and drives, we are devoted to integrating our members, campus, sponsors and local community into our very own Optix family!

FIRST GROWTH & SUPPORT

Our main goal as a team is to spread our passion for FIRST robotics and STEM to as many people as we can. Aspiring to inspire the younger generation, we have impacted over 50,000 students in southern California through our annual STEM and engineering events. In the past, some Optix members have traveled to Ranchi, India to organize 9 FLL, 7 FTC, and 2 FRC teams in low-income communities, presenting at 10 different government-run schools. To support the teams we assist, we provide regular mentorship, resources, and advice to our fellow FIRST teams. Since 2017, we've mentored 45+ FIRST teams and assisted dozens more. Since 2021, 10 of the FLL teams we mentored qualified for the SoCal Regional Championships, during which 5 teams were further recognized. The FLL Explore team we mentored qualified for the World Championships in April of 2022. Since 2016, Optix has hosted annual FLL scrimmages, involved FTC teams in our events, and strived to spread the aspirations and values of FIRST within our community.

LOCAL UPLIFT

We endeavor to uplift our community on a local and global scale. Optix members have helped 50+ local businesses stay afloat by creating beneficial partnerships. Our team emphasizes local uplift in all aspects; we have promoted STEM through various local events such as the annual STEM Expo which receives more than 26,000 people, various workshops, STEM Fairs, Book Drives, and much more. Since 2019, Optix has brought scouting and robotics together through Eagle Projects with Boy Scout Troop 654 Poway, integrating FIRST Core Values with Scout Law to assemble various community projects. Furthermore, we promote sustainability through our regular environmental events such as beach clean ups, trail clean ups, and involvement in climate change research.

EDUCATION

Education is a prestigious value held highly within Team Optix. We cherish every opportunity we receive to share this value with our community. Since 2019, we have hosted annual programming workshops, created our own Java training course, provided personal tutoring, and mentored over 500 students at our local K-8 schools. Our workshops have been funded through the help of Apple, Amazon, the Cognizant USA Foundation, the Department of Defense, Televisa, and Northrop Grumman. Within the last few years, we have been very successful in our efforts to spread STEM education. In the 2022-2023 season, Optix continued our partnership with organizations like Girls in CS, hosting local hackathons for middle schoolers. We have also embraced new partnerships with organizations like SWE, UNICEF, HOSA, Coding4Kidz, CyberBorn, Stemality, and Arduino Club to further magnify our team's impact. We have inspired 30,000+ students to pursue their STEM dreams through the various events Optix has directed such as the FIRST showcases at local elementary schools, FIRST Stem Fairs for the community, and participation in the annual San Diego STEM Expo and Fleet Center Science Fair.

COMMUNITY SERVICE

The heart of Team Optix is community service. With an attitude of gratitude we give back to our community and provide opportunities to those less privileged than us. We have actively led 2 local hunger-relief initiatives to mitigate the effects of COVID-19 on the homeless and low-income families since 2020. We have raised \$1000+ for the Feed America foundation, provided 3000+ meals to the homeless, and partnered with the Hindu American Food Pantry to donate 150-200 pounds of non-perishable food to food banks per month (~2200 pounds annually). Furthermore, Optix worked on the Diya Project and the Sapling Drive and helped raise \$2.5k to feed millions of children in rural India.

Continuing our fight for the youngest generation, Optix organized several sustainable initiatives to support the growth of children internationally. Since 2021, we have partnered with the non-profit Corazón de Vida to host annual supply drives, collecting 5,000+ donations of household items for 10+ orphanages, each housing 500+ children, in Baja, Mexico. Optix members have also written letters to local law enforcement and local orphanages to show our love and appreciation for their work and support the mental and emotional health of orphans. Furthermore, we have raised monetary donations to contribute to the international fundraisers held by UNICEF and Akshaya Patra to help the underprivileged in countries such as Africa, India, and Pakistan. Collaborations with organizations such as Corazon de Vida, Interfaith Community Services, UNICEF, and Love Without Boundaries, has allowed our team to impact 7,000+ children.

ADVOCACY

Within our school, we work directly with our Anti-Racism and Equity Task Force to supplement the voices of all students on campus. Members of Optix have been elected onto the Superintendent's Student Advisory Council for the Poway Unified School District, actively promoting initiatives to bring diversity and inclusivity to our community. In 2020, Anika, a proactive Optix member made and sold 600+ masks, 100% of the profits being matched by the HP Global Network Foundation (\$2600 total) and donated to the Black Lives Matter Global Network Foundation.

GENDER DIVERSITY

This year especially, Optix has played an active role in encouraging women voices in our team through Girls Meet Up events where women express their feelings and experience thus far on the team, and counsel open discussions on how to further improve Optix's inclusivity and diversity. Optix has also created an Albert's Angel Initiative to promote diversity and inclusion for women in the STEM field. We also partook in the Women's Conference for FRC ladies at RB. Optix encourages diversity at all levels of our team: 40% of our officers and 30% of our club identifies as female and/or nonbinary. Since 2019, Optix women have been leaders in the Girls Play Global Initiative to educate and empower girls in rural India and bridge the gender gap around the world. We have also partnered with UNICEF and Akshaya Patra to aid women in underprivileged parts of the world like India, Africa, Pakistan, and more.

INNOVATION

In 2020, Optix programmers created several platforms and algorithms from scratch to help our team become more productive and efficient. All of these programs are organized on a mobile app called OptixToolkit which is available for free downloads on both Android and iOS. The app is open-sourced,

and includes features for Tool Management, Tracking Hours, and Optix Reimbursements. Tools Management is a feature that allows members to queue and reserve tools and machinery. This program was especially helpful during the course of the COVID-19 pandemic to help with social distancing as well as to prevent confusion with tool availability. Our Hours feature of the app tracks members' hours, continuing our efforts to maximize efficiency for future years. The app also includes Optix Reimbursements in order to make club finances simpler and efficient. We also have a separate calendar system called OptixBalance, a team-based calendar system, used to maintain accountability among team members during the season. We schedule our season's outreach initiatives with robot building goals through this system.

Furthermore, in the 2022-2023 season, our team has created OptixScouting, a scouting app that our members created to make scouting more efficient, accessible, and organized. The app includes advanced features such as a database, simple match scouting system, and quantitative scouting elements to make competition scouting into a simple process that both Optix members and other FRC teams can use to maximize scouting efficiency!

INCLUSIVITY

We aim to build strong student leaders in our community who embody FIRST's core values. To uphold this principle, we have a strong policy of no tryouts required and that anyone, regardless of engineering experience, can join our club at any point in the season. In our Build Department, our members must earn or renew a certification for them to properly use the equipment. Returning students help our first-timers earn these certificates, and everyone is given the chance to complete training under supervision of our Vice Presidents. After attending the FRC World Championships for the first time in 2022, our outreach department was inspired to build ourselves anew. We created Optix Passion Initiatives (OPI). In this system, everyone is encouraged to create their own OPI event, or in simpler terms, be a leader in their own outreach event. Fast-tracking the process of creating volunteering opportunities, we doubled the amount of events and members involved in outreach. Through firsthand experiences and memories, our team structure gives an opportunity for everyone to work in different sectors of robotics and STEM, diversifying the skillsets of our members. We are training our members with essential life-skills so they can become the aspirant leaders of STEM needed in the future.

SUMMARY

Team Optix is visibly succeeding in our goal of transforming lives in our local and global communities. Through our outreach events, volunteering for 3000+ hours, impacting 50,000 people, and donating 5,000 supplies, we have progressed in our goal of being dynamic leaders in our community. Now in our 13th year in FIRST, we continue to catalyze and embody FIRST founder Dean Kamen's statement: FIRST is more than robots. Optix isn't just a robotics team, we are 99 engineers, 99 excitors, and 99 energizers, all with the same goal: to charge the community around us with our impact! ;

