FIRST Impact Award - Team 3256

2023 - Team 3256
Team Number
3256
Team Nickname
WarriorBorgs
Team Location
San Jose, CA - USA
Describe the impact of the *FIRST* 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 *FIRST* programs as mentors/sponsors.
FIRST creates opportunities for students to flourish using a variety of hard and soft skills in a creative, technology-oriented environment. As a result, current members are determined and enthusiastic students, averaging a 4.43 GPA and pursuing extracurricular programs/internships at NASA, Nvidia, and more. Our program's effects are evident, as 100% of Team 3256's alumni graduate high school and attend college, with 85% pursuing STEM majors; currently, 20% of our mentors are alumni.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Through community research, WarriorBorgs found that equity in our district's education is especially lacking. Our team started an outreach with the Greene Scholars Program, an initiative dedicated to providing African-American youth with hands-on STEM enrichment. Together, we trained over 30 3rd-9th grade students in the basics of LEGO Mindstorms over the course of 3 years. Our efforts were recognized by program representatives, who presented us with the prestigious "Hero of the Year" award.
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?
Over the past 3 years, the WarriorBorgs have run 9 FIRST-related outreach programs. To ensure sustainability, we require that each member completes 50 hours of outreach annually. We have also instated a satisfaction survey system that ensures that our outreach events have a quality impact on the students reached. Our longest recurring outreach event, a robotics course at 2 local Title I schools, has been running for the past 12 years, with WarriorBorgs consistently visiting twice a week.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
Through various student efforts, the WarriorBorgs have left a lasting impact as role models within the FIRST community. Over COVID-19, we created a virtual platform for us to share our FLL-team starter guide, our FRC insight/resources, and our STEM outreach curriculum. More recently, we have worked

with FIRST FRC teams both locally and globally, such as team 7565 Robonáticos from São Paulo, Brazil, for whom we helped kickstart a sustainable business and outreach programs.

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

Over the past 3 years, Team 3256 has supported a total of 21 FIRST teams, dedicating a collective 2000+ hours each year towards the expansion of the FIRST community worldwide. We have founded and continue to support 11 FLL teams, 1 FTC team, and mentor over 15 FRC teams, 3 in Title 1 schools. Ever since our rookie year, we have had an open cooperation during each season as part of our initiative to help as many teams in our reach: donating parts, resources, code, and access to field elements.

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?

Our outreach programs build student leaders in science and technology. Our local STEM initiative, WarriorBuild, has reached 500+ students, 88% of which said that our classes inspired them to pursue a STEM career in the future. For over a decade, our team has hosted summer camps for elementary & junior high students to gain FLL experience; 75% of campers later joined FIRST teams. We have also reached 200+ female students with our Bridge the Gap programs, encouraging their pursuit of STEM careers

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 past and present in-kind sponsors - PartsBox, Pop Up Tea, KeyShot, and ConnectTeam - help us renovate our systems and improve our team efficiency. Outreach funding from the City of San Jose, FIRST NorCal, and the FIRST Equity and Access grant allow us to create innovative new programs like WarriorBuild and WarriorBundles that reach a wider audience. Financial sponsors like Raytheon, Intuitive Surgical, Nvidia, Apple, and Valley Christian High School fund buying parts for our FRC season.

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

We educate our members and mentors on the importance of acknowledging inherent biases through our WarriorBorg Inspire Events, where we speak about challenges that underrepresented students in STEM face. We have collaborated with our school’s numerous ethnic Students Unions, where we have introduced students to FIRST robotics to create a diverse and inclusive team. Additionally, we have partnered with Friends of Children with Special Needs to host FLL Challenge workshops with their students.

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

To preserve our team’s skills and knowledge, The WarriorBorgs is entirely student-led. By having our students take the lead, we understand how important it is to retain and pass on skills. Our training program, WarriorBound, consists of technical training and off-season projects so all WarriorBorgs get the expertise needed to be successful in their field. Veteran members train and certify rookies in our Machine Shop and with electrical equipment to ensure a safe and productive season.

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

Over the past 3 years, we evolved from sending cold emails to creating brochures and sponsorship packages to communicate our team's vision to sponsors. We emphasize our desire for sustained impact and encourage sponsors to join us on our journey for quality education for all. We share our appreciation for sponsors' support by updating them monthly on our product usage and new endeavors through email contacts and social media. Some of our sponsors, including Apple, volunteer with our team weekly.

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

In past years, one of the challenges our large team faced was the lack of communication and project management between subteams. This season, we incorporated a customizable project management system called Notion, which allows us to communicate tasks and deadlines within our team to be consistent with our goals. At each of our meetings, our team dedicates at least 30 minutes specifically to give updates on each subteam, improving each member's awareness of the team's progress.

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

Team 3256 aims to bridge the gaps in STEM education by spreading FIRST's message and inspiring the next generation of pioneers in science and technology. We expose local students to the potential of STEM through robotics workshop initiatives like WarriorBuild and Bridge the Gap. We also spread the message of FIRST globally through our outreaches in 11 countries, helping youth grow into imaginative and successful people. Over the past 3 years, we have reached 5000+ students through our programs.

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.

Leading with our hearts, the identity of the WarriorBorgs is shaped by our members and community. After researching the gap in equitable health resources in San Jose, we founded our WarriorBeat initiative to advocate for better access to medical technology and supplies. As part of this, WarriorBorgs lobbied our district council to recognize Heart Health Awareness month. We also added red highlights to our robot and are handing out red ribbons at competition to raise awareness for cardiac health

Essay

The vision of the WarriorBorgs is to foster lasting change in our communities and world by creating, molding, and inspiring young leaders in STEM. We recognize the disparities in STEM education, and we

are dedicated to leveraging our platform to bridge the gaps around us.

School Impact Despite being the only engineering program at our school in 2010, our 10-person team won the Rookie All-Star Award. This achievement sparked the development of our school's renowned Applied Math Science & Engineering Institute, which today has 34 programs and 800+ students.. Through consistent participation in open houses and schoolwide robot demonstrations, we bolstered interest in robotics, increasing team growth by over 400% in the past decade. Last year, the WarriorBorgs initiated an annual informative FIRST speaker series to reach a more diverse audience within our student body. We partnered with 37 clubs in 2022 and 24 more in 2023 to reach a total of over 600 members. We held presentations at clubs such as Girls Who Code, Diversity Matters, Latino Student Union, Black Student Union, and South Asian Student Union to share the FIRST message and how to get involved in FIRST robotics. As a result, seven clubs, including Arduino and 3D Animation, were inspired to pursue FLL Challenge outreaches as part of their service projects. To provide a stepping stone from general STEM interest to FIRST Robotics, we helped establish and sustain the RoboQuest program at our school. We taught over 400 students worldwide to construct and program individual robots to participate in an international “Mars Madness” competition with schools in the U.K. and Canada. Our members created the RoboQuest curriculum to focus on developing technical skills and a FIRST mindset, and we continue to teach it to new students year-round.

Community WarriorBorgs ensure that STEM overcomes all racial and income barriers. From Sept-Dec 2021, we ran a STEM engagement program called WarriorBuild at the Biblioteca Latinoamericana Branch Library, which was funded by the FIRST Equity and Access grant. The local area sustains an average income of $20K lower than the minimum in San Jose and has a poverty rate of 19%. With four-week courses targeting the different foundations of STEM, we led workshops on everything from basic chemistry to aeronautical engineering. Eighty-eight percent of our students said that our classes inspired them to consider pursuing a STEM career. We even partnered with our City Council to identify areas where our WarriorBuild program would be most impactful in the lives of underserved children in San Jose. In order to facilitate our efforts, District 2 Councilmember, Sergio Jimenez, and the Director of Community Relations awarded us a grant and provided logistical support to our 2023 WarriorBuild program expansion to Title 1 schools, such as Caroline Davis Intermediate School, Samuel E. Stipe Elementary School, and Christopher Elementary School. The Director commended us by saying, “WarriorBuild is an amazing program for our district. Thank you so much for your hard work in improving our community!” Using the feedback we gathered from Councilmember Jimenez, we found that our WarriorBuild curriculum could be adapted to serve a greater impact at the Boys and Girls Clubs of Silicon Valley. Beginning Arduino workshops there last summer, we were able to establish a lasting platform, reaching over 350 students by the spring of 2023. Members of our team visit the clubhouse in Alum Rock weekly, building close relationships with the students while sharing our own experiences and stories as young students discovering STEM.

Gender Equality The WarriorBorgs started a gender inequality awareness campaign called “Bridge the Gap” five years ago. Since then, we have collaborated with 21 female influencers in STEM careers, reaching a social media base of over 4 million people to help spread our message from California to Israel and beyond. Additionally, we hosted a Bridge the Gap poster series on our school campus, featuring infographics that raised awareness for the gender gap in STEM careers, reaching nearly 2000 students. Before the pandemic, we hosted a 4-day Girls STEM camp to introduce underserved girls in San Jose to different STEM fields. We taught 23 girls aged 5-12 about STEM using hands-on projects that we grew up with, like strawberry DNA and spaghetti-marshmallow towers. As part of Bridge the Gap,

in 2018, we hosted our first WarriorBridge Conference, where we brought together women of influence in STEM fields and girls from our school to discuss the value of pursuing STEM careers. The conference filled a classroom of science teachers and female students sharing their advice and experience in exploring STEM on a high school level. In 2023, we scaled up and hosted a second conference. This time, we collaborated with female leaders in STEM, business, and philanthropy. Our attendance exceeded 120 people, becoming one of the most successful events hosted at our school. Panelists shared insightful advice regarding their experiences and growth as women in male-dominated careers. One such speaker expressed how inspiring the conference was, remarking that she “wished [her] high school self could have experienced an event like this.”

Global Impact Amidst quarantine, the surge of online learning inspired us to launch a website to provide students with accessible resources to learn about robotics and STEM. Within three months, we built a sustainable digital platform for students, equipped with twelve courses ranging from DIY science labs to information on starting FLL teams. Using this website as a resource, we ran virtual coding camps for students between the ages of 6-14, teaching weekly classes in Java, Python, and Scratch for 3 months. In total, we contributed 140+ hours to teaching 90 kids the basics of coding. Using funds from our virtual coding camps and grants, we donated $3,000 in computers and EV3 Kits to the OmSai School in the village of Maddi, India, to build a robotics lab. In this new space, we conducted virtual LEGO robotics workshops from December 2020-May 2021. Despite COVID being at its peak, we were able to reach 27 students aged 5-12, leading them through the basics of EV3 and the FLL season. Hari Gadi, the Director of the OmSai school, said, “The WarriorBorgs were instrumental in developing STEM education at our school. They were resilient and determined to help our students despite COVID-19.” Since 2021, WarriorBorgs have been partners of Mission Ethiopia, a program under the Ethiopian Fellowship Church. By hosting an annual FLL workshop series at the church, we are reaching a large base of diverse students, giving them initial access to the FIRST community. Our goal is to form an FLL Challenge team in Addis Ababa for the 2023-2024 season. We began preparation for the season by sending them FLL Challenge kits. In January 2023, we started our partnership with the Children’s International School in Lagos, Nigeria, to host a four-week Arduino workshop. Taking French classes to prepare for this camp, the WarriorBorgs worked diligently to make the experience as immersive as possible. We taught a cohort of students the basics of Arduino, diving into electrical engineering, circuit-board building, and complex coding.

Health Equity Our drive to help our community inspired us to begin our newest initiative, WarriorBeat, in which we have collaborated with local nonprofits to advocate for change in the healthcare system. Alongside Congresswoman Zoe Lofgren, a representative on the House Science, Space, and Technology Committee, we lobbied the state and federal government, asking lawmakers to increase access to cardiac rehabilitation programs. She acknowledged our efforts, letting us know that our actions helped pass the Increasing Access to Quality Cardiac Rehabilitation Care Act of 2022, a law that accelerates and expands cardiac rehabilitation programs for low-income households in the United States. To emphasize our commitment to this cause, we added red highlights to our robot, reflecting the official color of heart health awareness. While we aim to make a widespread change to the healthcare system, we also hope to personally connect with members of our community. This season, WarriorBorgs handmade and wrapped WarriorBundles for terminally-ill children and families supported by Ronald McDonald House Charities at the UCSF San Benioff Children’s Hospital in Mission Bay. The care packages contained blankets, chapter books, fuzzy socks (with hospital-safe grips), toiletries, chapstick, hand sanitizers, and breath mints. Members also made handwritten cards to include in the kits, each with kind messages and encouraging words to motivate them. WarriorBorgs are committed to advancing

equal opportunities for neurodiverse kids. In March 2022, we hosted our inaugural FLL Challenge workshop series at a local San Jose nonprofit, Friends of Children with Special Needs (FCSN). Since then, we have expanded our program, doubling in size to reach more students yearly. Our initiative reaches students aged 6-17 with intellectual disabilities such as autism and Down Syndrome. During these workshops, we teach students about LEGO robotics in a way that stimulates their spatial thinking processes and improves their fine motor skills.

The heart of the WarriorBorgs lies in the FIRST message - “to foster a future in which diverse student leaders in STEM are celebrated and recognized.” Building on our past, our mission is to continue being beacons of change and to motivate the next generation of pioneers. We aspire to create global FIRST opportunities, advocate for underserved populations, and bridge the gaps we see in our world.

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