

***FIRST* Impact Award - Team 359**

2024 - Team 359
Team Number
359
Team Nickname
Hawaiian Kids
Team Location
Waialua, HI - 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.
We bring modern technology to rural, underserved areas. Our STEM Learning Center (SLC) is a maker space for students to explore their passions in mechanics, electronics, & graphics, leading to 3x more academic proficiency in Science, Math, and English. 95% of alumni entered STEM professions. In the last 3 years, 100% have pursued higher education compared to 30% schoolwide. 25+ of our students have returned as mentors and 70% of current mentors are 359 alumni or their parents.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Team 359 is the most geographically isolated FRC team on the island and serves as a focal point of STEM learning in Hawaii. Many students choose to travel across the island and attend Waialua HS to be part of 359. We are an independently funded program, providing resources & support to 25 schools/programs across the State. With 60% of students qualifying for free/reduced lunch, we subsidize 70% of team & travel costs, allowing students of all socioeconomic backgrounds to participate in FIRST.
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?
We donate \$240K+ annually to Waialua HS's program & extracurriculars, such as After School All-Stars, Band, & Athletics. Our advocacy for HI STEM education allows 7 public schools to receive \$7M in State funding, expanding STEM facilities, curriculums, and programs for 10K+ youth. 7 HI FRC teams now have state-of-the-art machinery such as lathes, water jets, etc., enhancing their programs for years to come.
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.
Our students regularly act as ambassadors, hosting facility tours & STEM workshops for students & mentors from FRC teams in 9 countries. As a Hall of Fame (HOF) Team, this year we formed the HOF student advisory council where we give feedback to other Teams on submitted awards. Our team hosts

virtual FIA exchanges, providing teams the opportunity to share presentations and receive feedback. Team 6909 participated and won Regional Engineering Inspiration and Team 316 won FIA for the first time.

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 year, our service, the Hawaiian Helpers, has assisted 80+ teams at various regional events with our equipment. Internationally, we've aided Team 7719 by donating 5 custom swerve modules and guiding them in robot construction, and Team 8338 in the reconstruction of their robot. Locally, we extend our support to more than 25 FIRST teams through our facilities. By working with our state, we've provided 6 FIRST programs in Hawaii with a combined 5-million-dollar grant.

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 "After-School All-Stars" program promotes STEM learning to expose low-income and at-risk students to FIRST and STEAM, allowing them to discover their passions, join our team, and become innovative and well-rounded leaders. Our students developed a custom gyro to help with drift on the robot. Our team uses Special Projects to address issues within our community by designing & building solutions leveraging equipment at our SLC and expanding our toolbox.

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

We've strengthened our partnerships with current sponsors like Oakley (providing us high-quality apparel at cost) & Skydive Hawai'i (donating their forklift). This provides our team with quality low-cost support while we work on repairs to our buildings. We bought a T-shirt printer to make lower cost apparel for our team and other organizations and school, lowering costs for all of us. Through strong sponsorships with Hawaiian Electric & Pearl Harbor, some of our students have landed careers.

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

At Waialua HS, 81% of students are of color, including Native Hawaiian/Pacific Islanders, and 60% of the students qualify for free or reduced lunch. Our team bridges the equity gap by providing advanced technical and manufacturing opportunities to learn. With our initiative to expand membership to 7th/8th grade and other schools/programs, our program has developed into a diverse group of students with a 1:2 female-to-male ratio with 75% women in leadership & 70% identifying as a minority group.

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

We are prioritizing expanding our team beyond our district. The majority of our mentors prioritize their specific skill sets when assisting our team. Through remote mentorship, we have brought in mentors to help in growth areas. Our team has also begun opening our program to other schools, bringing more students new opportunities in STEM through our program while expanding our team. Through our grants we've purchased new machinery to keep us in line with cutting edge technology.

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

Through our SLC, we manufacture PPE products, catalytic converters, and t-shirts that benefit our team and community. Events like Made in Hawaii and AFCEA gain us visibility from different companies, grantors, and foundations. We use state grants for capital equipment like CNCs & Water Jets for ourselves and other teams in our state. We volunteer at local events, such as Special Olympics & Bon Dances, and give student-led facility tours to showcase our progress and student designs.

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

Due to the lack of STEM exposure and smaller pool of students in our rural community, we struggle with student recruitment and mentoring. To combat this, we expanded our program to include students from the 7th grade & from other schools/programs islandwide. With the wide range of activities we are involved in, we needed to come up with a more approachable way to share with our current and potential sponsors what we were doing. We created a magazine to showcase our program to a wider audience.

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

We began in a small storage closet in 1999 and gradually expanded to three facilities and recruited students from other districts. We aim to give life changing discovery opportunities to students by exposing our students to activities in 5 other STEM-related fields to encourage their interests. By offering more STEM opportunities, we aim to transform our rural community by preparing students for higher education through FIRST's mission while understanding life outside our island home.

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.

For many teams, robotics is a co-curricular, but for us, robotics & STEM is our FIRST priority. Leveraging the record \$58K we receive from Special Projects, \$133K from sponsorships, & the \$468K we receive from grants, we work to provide youth with electronics, equipment, travel opportunities, & cultural exchanges, shaping well-rounded leaders in STEM. At graduation, we celebrate our Seniors' achievements by awarding scholarships of up to \$3000 to further their passions beyond high school.

Judge Feedback

Who/When

Feedback

What is described in the essay and executive summary that can be better reflected in the presentation?

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

Our Island Team 359, The Hawaiian Kids, began in 1999 as the first robotics program in Hawai'i. Today, we have 30 students in a 1:2 female-to-male ratio, with over half of our students being part of minority groups & 60% of our overall school needing free or reduced lunch. Since the closure of Waialua's historic

sugar mill, our town has struggled economically and culturally. We want to transform our town's identity to be known for housing leaders of the future. Our mission is to create STEAM opportunities for our community, encouraging youth to build a better world for future generations through our STEM Learning Center (SLC).

Serving Our 'Ohana Our SLC allows us to make a positive impact on our island and community. Through the engineering design process, product design, manufacturing, installation, & commercialization, we overcome challenges, serving our community and island. Our SLC equips students with years of practical experience in fabrication using industry-standard tools such as the CNC waterjet, mill, lathe, & more to lead our Special Projects and address pressing issues through STEM.

After an alarming rise in catalytic converter thefts in HI, we took the lead in designing & manufacturing shields to protect our community. As the only vendor of catalytic convertor shields in HI, the product is now a source of funding for 359. Through our Special Projects, we earned \$60.5K+ in the last 3 years. We present the projects & network with tech companies at AFCEA (Armed Forces Communications Electronics Association), making connections with industry businesses earning us a \$3K sponsorship & 10 job offers & internships across the nation.

Due to the success of our shields, the community relies on our students' capabilities and resources to design, create, & manufacture high-quality custom items at low cost. Our Spam Slicers are shipped to businesses locally & across the globe. Locally, we are known to produce high-quality trophies, like for the Oakley Oahu Junior Golf Association, & as an option for water jetting for commercial needs.

Our State Government & Department of Education (DOE) recognizes the tremendous impact 359 makes on the Waialua community, awarding a \$1.35M grant to fund & expand our SLC. The DOE grant helped us make necessary repairs to update our infrastructure & be on par with other cutting-edge technological centers. We purchased electric generators for our school, as we've lost power 10x+ this year. To expand our impact, we led a collaborative effort with 5 other schools to receive funding & the HI DOE awarded us with a collective \$5M of a STEM Dream List Grant. By providing funds to enhance resources within the HI public school system, the grant ensures schools have the resources to be competitive in technology. Schools will utilize this grant to improve education and buy better equipment & machinery, such as cutting-edge 3D printers & water jets. FRC 3880 values the grant as it enables them "to be prepared for 21st century jobs and industry opportunities." They emphasize its ability to "empower students for living-wage employment, new frontiers of entrepreneurship, and innovative forms of community resiliency." Such initiatives allow us to improve STEM education across our island, state, & the Pacific region.

359 is dedicated to providing a well-rounded education to Waialua's youth. We donate \$246K annually to extracurricular organizations, including Waialua HS's Graphic Design, Athletics, Lion Dance & Band program, to discover our STEAM passions beyond robotics and giving our school chances to succeed.

We allocate \$106K to fully staff After-School All-Stars (ASAS), a non-profit program that offers after-school tutoring and STEM enrichment activities for elementary and middle-school students. ASAS plays a crucial role in nurturing leadership skills as we mentor and provide academic support to younger students. Those in ASAS graduate with valuable STEM skills, a pipeline as nearly 100% of our team members have been through the program.

Inspiring Our Keiki Coming from a rural & underserved community with limited STEM opportunities, many

of our youth feel discouraged, believing that their schooling cannot compete in rapidly advancing STEM fields. However, we directly attack this insecurity by fostering an environment where students, guided by experienced mentors & peers, are encouraged to explore their abilities & discover their true passions. Through STEM classes, resource donations, & open membership to our program, students gain valuable skills, preparing them for future careers while exposing them to what FIRST has to offer. 359 ensures that ALL students in rural Waialua receive a strong education & real-world experiences despite economic & educational hardships, 100% of students in our program pursue post-secondary education careers, in contrast to 30% of students school-wide. This year, we hosted 250 kids at the HI FLL State Championship, running the webcast, logistics, & food service.

359 relies heavily on alumni mentorship & volunteers for support. In recent years, we struggled to maintain consistent mentorship, making it challenging to expand. To address this, we invited mentors beyond our island. Our remote mentors come from different parts of the US, each with diverse backgrounds. They played a crucial role in continuing our Business, Media, & Documentation subteam. By sharing their knowledge and providing guidance, they've helped our team appreciate our progress and the potential for further impact on our community. Under their leadership, we've strengthened our communication and outreach efforts. For the first time, we created a magazine that showcases our entire program, making it more accessible for current and prospective donors. As some of our grants come with reporting requirements, students take charge in fulfilling these obligations, ensuring we can continue securing funding and providing STEM education to numerous students through our SLC.

Sharing Aloha We optimize our facilities & funding by building up the programs around us. We collaborate with 22 Hawaii FRC teams through our facilities, supplies, equipment, practice field, collaboration of ideas, CAD & knowledge.

359 works to educate both the mind & the spirit. By participating in cultural events & festivals, we learn about & gain an appreciation for different cultures. Participating in Japanese bon dances, Kūpuna luncheons, & Made in Hawaii Cultural Showcases promotes a sense of community within 359. These events encourage us to embrace our culture by incorporating elements of different faiths, connecting with our elderly population, & actively supporting local initiatives. They expose us to new values which directly strengthen vital skills such as communication & teamwork.

Coming from a diverse community, we recognize the importance of traveling beyond our island to develop cultural competence. We have been fortunate enough to visit the US Mainland, Canada, China & Japan, allowing some students to leave the island for the first time & experience different cultures through competitions, workshops, & STEM-related events. When the Japanese Ministry of Foreign Affairs invited us to participate in a multinational cultural exchange. We visited Japan in 2022, expanding our cultural horizons as we immersed ourselves in Japanese perspectives, language, & culture. For most of us, it was our first time leaving the US. As one student said, "Despite the language barrier, I learned new things about myself & the world around me as I tried new foods & experienced Japanese family life during my homestay." Our recent visit to Japan was noticed on social media by Japanese Team 6909. Last year, they competed in the Hawaii Regional and visited our SLC to learn more about our program. We worked with them before and during the competition, collaborating, practicing; they later went on to win the EI Award and join us at the World Championship!

The unity that our team & SLC has made with institutions & teams across the world has helped us broaden our global mindsets & allowed others to experience our Aloha spirit. We have taken this spirit

and try to help others “Make it loud!” by hosting virtual FIRST Impact Award (FIA) Exchanges. To overcome the challenges of time zones and distance to support more teams, we hold it virtually. We invited teams from around the world to share ideas, present their work, & identify places for improvement. Our platform has a broad reach, with participation from more than 20 teams from Taiwan, Mexico, & various parts of the U.S. By attending our FIA Exchanges, FRC 316 won FIA for the first time in their history. One student said, “After working on the FIA for 2 years prior, getting to work with Team 359 my senior year opened my eyes to what is possible through FIRST. It made us better at effectively communicating the benefits and opportunities our programs provide within our disadvantaged community.” We gathered at the FIRST Championship, where we celebrated together at the Hall of Fame Booth.

Our service, Hawaiian Helpers, has aided and assisted 25 teams in Hawai'i, and 80+ teams globally in the last 2 years. Teams come to our shop to machine parts using our equipment. At competitions, we give support and advice on programming, construction & give spare parts to teams.

Our journey through community service & engagement while continuously challenging & expanding the minds of our students is our top priority. In recognizing our community's hardships, we seize the opportunity to give back, empowering ALL youth with resources to pursue their passions. Whether through our impactful Special Projects or far-reaching FIA Exchanges, Team 359 commits to supporting both our local community and teams worldwide. The most profound lesson that participation in FIRST teaches us is the imperative to extend our Aloha, not only across the island but globally, solidifying our position as a focal point in STEM.;

