

## FIRST Impact Award - Team 2438

### 2025 - Team 2438

#### Team Number

2438

#### Team Nickname

'lobotics

#### Team Location

Honolulu, HI - USA

**Describe the impact of the *FIRST* program on team participants within the last 3 years. Think about percentages of those graduating high school, attending college, in STEM careers, leadership skills, and serving as mentors/sponsors in *FIRST* programs.**

Our Center for Innovation & Leadership (SCIL) is a shared resource for our community. It is home to FIRST® programs which enable 100% of our members to attend college and 99% to pursue STEM careers (compared to 50% & 31% respectively for students statewide). 93% of members are involved in STEM outreach programs after graduating. Alumni mentors volunteer for FIRST; alumni business owners become FIRST sponsors. Members develop skills by mentoring FRC/FTC/FLL & running STEM workshops & curriculum

**Describe your community along with its unique opportunities and circumstances. Think about your geographic region, diversity of town/school, language barriers, socioeconomic barriers, and cultural expectations.**

We are from Honolulu, HI where 25% of youth ages 16 - 19 are not enrolled in any type of school. 18.2% of our school is Native Hawaiian and/or Pacific Islander (86% are multiracial) compared to 0.2% nationally. The demographics of our team reflect our diverse community. We are one of the only 100% BIPOC teams in the US. We work specifically within Indigenous communities to build STEM proficient youth; this combats their underrepresentation in the labor force.

**Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* Mission in ways that are effective, scalable, sustainable, and creative.**

Ignite Publishing House (IPH) shares FIRST principles via K-12 STEM curricula (1,700 downloads/51 countries/6 languages). We started robotics programs in indigenous communities in HI, NZ, Tahiti, Navajo/Yüpiik/& First Nations, contributing an average of \$27,000 per project. We develop teacher PD to advance FIRST principles. We track STEM involvement & surveys show a 241% increase after our programs & 100% of schools continue robotics. FIRST with Aloha supports FRC teams arriving for HI Regional.

**Describe your team's goals and the progress you have made towards them to fulfill *FIRST's* Vision.**

Our mission is to increase Native and Indigenous representation in STEM, focusing on the Polynesian Triangle. We start by providing accessible STEM programs from age 5, fostering early engagement. We support students through post-secondary education with mentorship and scholarships. Finally, we build industry partnerships for job placement, ensuring a full-circle pathway from curiosity to career. Through these efforts, we bring FIRST's vision to life, creating lasting impact in our home.

<b>What impact has your team seen from your efforts described in the above question? How does your team measure impact?</b>
Our efforts have led to a 241% rise in STEM program involvement, lasting at least 3 years. We track impact through long-term data aggregation and surveys. Partnering with large nonprofits and social capitalists, we conduct thorough social impact evaluations before launching initiatives. In its first year, Ho’omau Academy’s first graduating class will generate \$8.2M in community impact, ensuring project viability and lasting change in Native Hawaiian and Indigenous STEM representation.
<b>Please provide specific examples of how your team and team members act as role models within the <i>FIRST</i> community with emphasis on the past 3 years. How do you share these best practices with other teams?</b>
Our team leads by example, mentoring FRC, FIRST Global, FTC, and FLL teams, developing robotics clubs, and building sustainable programs for Indigenous schools. To share best practices, we created We Are FIRST, leveraging nearly a decade of experience working in cultural contexts with Indigenous communities. We provide DEIB training, cultural consulting, and Impact outreach guidance, hosting 9 workshops and supporting 15 teams to help them build ethical, community-driven initiatives.
<b>Describe your team's initiatives to Assist, Mentor, and/or Start other <i>FIRST</i> teams with emphasis on activities within the past 3 years.</b>
We have assisted 140 teams, mentored 15 teams, started 25 FLL/FTC teams, & worked in 22 schools. We are the 2025 robotics program partners for the HI Office of Hawaiian Immersion Schools (HIS), and thanks to E Ola Nā ‘Ōpio, HIS schools will participate in FLL for the first time. We have secured \$75,000 as of 2025 for FIRST programs to create STEM proficient youth in HI by partnering w/ local and national senators. We brought LEGO® robotics (FLL leagues started) to 4 indigenous nations.
<b>What other initiatives have you created, grown, sustained, or participated in (<i>FIRST</i> or otherwise) to help inspire young people to be science and technology leaders and innovators? What outcomes have you seen from your efforts in the past 3 years?</b>
We've put \$300k+ into indigenous communities worldwide & revolutionized STEM in Hawai’i’s 23 HIS w/ E Ola Nā ‘Ōpio, our cradle-to-career robotics readiness program. In 2025 we grew this program to include FLL participation, and career-readiness for Native Hawaiian young adults; creating Ho’omau (perseverance) academy that teaches robotics skills and aligns graduates with paid internships and pathways into post-secondary STEM programs. Ho’omau’s program valuation for it’s first graduates is 8.2M.
<b>Describe the partnerships and relationships that you've created with other organizations (teams, sponsors, educational institutions, government, philanthropic entities, etc.) and what you have accomplished together, with emphasis on the past 3 years.</b>
Through grants from the Okamura Family, NZ Consulate, Yukon First Nations Education Directorate, Apple Education, and federal Native Hawaiian education funds, we’ve launched 29 STEM programs, developed 21+ curricula, and raised \$40K+ for statewide STEM. We’ve dedicated 3K+ hours to accessible STEM and directed \$300K+ into Indigenous-focused projects. Our Ho’omau Academy is backed by a \$1M+ nonprofit commitment, ensuring long-term impact for Native Hawaiian youth in STEM.
<b>Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, <i>FIRST</i>, and your communities.</b>
Our team, entirely BIPOC, with two-thirds of our coaches and over half our members identifying as female, champions DEI. We offer an open-source curriculum enhancing DEI, supporting the UN's Women/Girls in Science initiative. Through We Are FIRST, we develop DEI curricula with expert-led spotlight sessions for educational staff. Our collaboration with the Office of the Kula Kaiapuni underscores our dedication to celebrating diversity, embodying our commitment to inclusivity.

<b>Explain how you ensure your team and the initiatives you have created will be sustainable.</b>	
We create open-source, customizable, curriculum based on sustainable resources. This includes users learning to teach others for continuous knowledge sharing. Programming involves training participants in fundraising, budgeting & sponsor acquisition. We work w/ our govt to promote STEM ed funding. We strategically partner with industry giants and large-scale educational trusts with a minimum of 7-to-9 figure endowments to ensure our programs live on in perpetuity.	
<b>Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.</b>	
Our process knowledge is carried in and w/ senior members of our team. We do so much in a short period of time that it's easy to overlook reflection. We've realized that this is mission critical for perpetuating our team culture & structure. Now, we build time into our practices for documentation & have created positions in our subsystems dedicated to archival. This includes project postmortem, organization of curriculum, aggregating stakeholder information, & chronologizing digital artifacts.	
<b>Briefly describe other matters of interest to the <i>FIRST</i> 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, particularly noteworthy, or had a large impact.</b>	
We don't just share a Western approach to STEM-we rewrite it. For nearly a decade, we've worked w/ Indigenous & Native communities, not as saviors, but in true partnership, seeing the abundance of wisdom they hold. We center Indigenous science, ancestral wisdom, & cultural ways of knowing, ensuring education reflects & uplifts these perspectives. While others are just starting this work, we live it, breathe it, & are deeply rooted in it as both allies & members of the Native Hawaiian community.	
<b>Judge Feedback</b>	
	<b>Mahalo piha for your time. What advice do you have for us to continue in our work beyond the robot and how can we be more clear in communicating the magnitude and impact of that work (submission, presentation, etc...)?</b>  <b>An area the team has an opportunity to improve.</b>  <b>Something that really impressed the judges.</b>
<b>Essay</b>	
<p>We are 'Iobotics, Team 2438 from 'Iolani School in Honolulu, Hawai'i and we are committed to building a STEM proficient future for our island home. We believe that programs like FIRST® are mission critical for developing a thriving community of young people. We work to empower underserved and marginalized indigenous and native learning communities locally and globally through our outreach. Our season theme this year, Ho'omau (perseverance), represents the new phase of our most meaningful initiative, E Ola Nā 'Ōpio (the youth shall thrive). E Ola Nā 'Ōpio embodies our multi-year effort to create and maintain a cradle-to-career robotics readiness program for our Kamali'i (Hawai'i's Children).</p> <p>BREAKING BARRIERS TO EDUCATION</p> <p>STEM Proficient Youth In Hawai'i, the challenge of rising homelessness, poverty, and emigration threatens community prosperity. Our mission is to counter this by promoting STEM education across the state, believing in the power of education and technology to uplift communities. Our efforts have led to significant achievements, including the implementation of robotics in 29 schools, enhancing STEM participation by 241%, and contributions of more than \$300,000.</p>	

Our season's motto, "Ku'u one hānau Hawai'i" (Hawai'i, the cherished sands of my birth), embodies our connection to our home and our dedication to its future. Through our initiative, E Ola Nā 'Ōpio, we have achieved success in our local community. Our efforts have expanded across O'ahu, leading to a partnership with the DOE's Office of Hawaiian Language Immersion. This collaboration integrates robotics into the curriculum of every Hawaiian Language Immersion school across the state - a network of 23 schools distributed across O'ahu, Maui, Hawai'i Island, Molokai, and Lāna'i. This milestone underscores our commitment to build a technologically proficient generation throughout Hawai'i. This year, we have expanded our E Ola Nā 'Ōpio program into a comprehensive cradle-to-career robotics readiness initiative. For our youngest Kula Kaiapuni learners, who will soon join FLL, we have developed an FLL Explore program and corresponding engineering notebook that integrates indigenous science and ancestral ways of knowing. In 2025, we are advocating that a portion of the FLL competition in Hawai'i be conducted in 'Ōlelo Hawai'i to honor the participation of our Immersion School teams. This engineering notebook will also be shared with our First Nation school partners, who are forming their inaugural FLL teams, ensuring that our resources resonate across cultural and geographical boundaries. Historically, traditional Western approaches to science have acted as gatekeepers to diverse participation. By creating culturally reflective and place-based assets, we are making robotics education not only more equitable but also more accessible for all. To further support our underserved Native Hawaiian youth, we established our Ho'omau Academy. Through this initiative, we provide 2-week robotics readiness intensives in partnership with the Lili'uokalani Trust—a nonprofit with a significant endowment, dedicated to serving Native Hawaiian communities. The academy equips participants with critical STEM skills, opening pathways for them to continue their education or enter the workforce. Graduates of Ho'omau Academy have access to 2-year and 4-year post-secondary pathways supported by resources like the Pauahi Scholarships, or placement in paid internships with Native Hawaiian-owned organizations. By taking an active role in shaping these opportunities, Ho'omau Academy ensures our youth are empowered to overcome systemic barriers and build thriving futures. In its first year alone, Ho'omau Academy has created an estimated \$8.2 million in community impact, demonstrating the immense value and transformative power of investing in our Native Hawaiian youth.

Working with Government To create meaningful change, not only do we need strong programming and well-written STEM curriculum, but we need resources, funding, & supportive legislation. Systemic change begins in government. We meet and talk to representatives to secure funding (\$60,000) for STEM programs and encourage (STEM) professional development opportunities for teachers. Our partnerships include Hawai'i State Senator Michelle Kidani, Former Governor David Ige, U.S. Congresspersons, and our most recent fellow, Senator Brian Schatz. Continued partnerships with government officials will pave the way for conversations & collaborations between the government and our youth.

Scalable & Sustainable Programs Our programs are created with scalability & sustainability in mind. We do this with: free curriculum, equitable design and most importantly, STEM training so communities can continue programs autonomously. For example, our SumoBot program immersed students in engineering and taught them to build small bots. After running this program in the Boys & Girls Club, we developed an open-sourced, affordable, curriculum that eliminated the need for a laser cutter, thereby breaking down financial barriers to entry in robotics. We also created a corresponding training program to support rising STEM leaders on their own journeys; we recognize how impactful & important it is for students to see people from their own communities in positions of STEM leadership. Our focus extends beyond immediate financial viability to ensure the enduring impact of our programs. We build and maintain our relationships for the long-term. It's an incredible feeling to work with a kindergarten student who later returns to our middle school programs as a STEM proficient 8th grader.

Sponsors & Stakeholders Our Sustainable Engagement Plan (SEP), designed with 3 and 5-year outlooks, delineates our strategic approach to attract and keep sponsors engaged. By aligning our project's mission and vision with our donors' community objectives, we streamline our goals and magnify the success and impact of our initiatives. Our most substantial support has been garnered from the Lili'uokalani Trust, Apple Education, Hawaiian Airlines, private grants, and federal grant opportunities facilitated by the Office of Senator Brian Schatz and Hawaii Family Grants. Thanks to the generosity of these sponsors, we have successfully secured \$1 million in funding per year for the next

7 years. This will ensure the continuation and expansion of our programs and lay a solid foundation for sustained growth and community impact.

## PRESERVING CULTURAL IDENTITY

**Building Global Communities** In the vibrant mosaic of Hawaii's Lāhui, we are deeply committed to fostering innovations that are culturally meaningful, safeguard identity, and celebrate heritage. Our mission is to extend these enriching educational experiences to indigenous and underserved communities throughout Polynesia and North America.

In our project, Te Hekenga a Rangi (Descendants From the Skies), we ran scaffolded STEM programs (IPH) for Māori schools in NZ. Through this work, we increased student involvement in RoboNation & SeaPerch, an underwater robotic platform. Students built a custom bot that served a community purpose (water sampling). In this way, we are empowering communities to move beyond the scope of competitions to a place of culturally significant innovation that is more than just robots. The next year, this team from Rotorua qualified for the world championships in their corresponding robotics division and traveled to the US to compete for the first time. We continue to nurture this relationship and welcomed Māori schools to our campus in Sept. 2023 for an immersive robotics training.

Since 2022, we have developed a LEGO® robotics curriculum series (IPH) that joins technology and innovation with explorations of place, identity, and heritage. In February of 2023, we piloted the program in First Nation communities across Yukon, Canada. In partnership with the Yukon First Nations Education Directorate we ran 5 FIRST programs with the Kwanlin Dūn, Champagne and Aishihik First Nations (Project Name: ᑎᓴᓐᓴᓐ ᑲᓐᓴᓐᓴᓐᓴᓐ ᓂᓴᓐ - We Will Learn Together). With sustained passion, unwavering commitment and sponsor support we can bring STEM learning experiences to every indigenous community across Polynesia and North America. An average of \$27,000 in resources and in-kind contributions are provided to every project (\$102,000 to date). In April we will welcome the Tl'etinqox Nation to our school for a week long training in FIRST robotics.

**Diversity, Equity & Inclusion** Our DEI initiatives are central to our mission, ensuring that our programs are accessible and inclusive. By addressing barriers and biases against non-native English speakers (e.g. braille keyboards, apps that use symbols rather than words) and other historically disadvantaged groups, we aim to create a learning environment that reflects the diversity of our community and empowers all students to engage in STEM.

Through We Are FIRST, we have established a DEI Advisory Board, bringing together a diverse group of field experts to guide and support FRC teams in their efforts to embrace diversity. Our advisors lead DEI workshops, known as Spotlight Sessions, that delve into critical issues such as race, identity, the value of seeing cultures through an abundance lens, the integration of ancestral knowledge and engineering, and the importance of cultural fluency. These initiatives are pivotal in shaping an inclusive and equitable future in STEM, reflecting our unwavering commitment to diversity and inclusion.

'Iloboitics is at the heart of a transformative movement in Hawai'i, driving STEM education forward through innovative programs, global partnerships, and strategic collaborations. Our efforts not only address immediate educational challenges but also lay the groundwork for a future where every child in Hawai'i can thrive in a STEM-driven world.

Minimally edited to meet the character count with the help of ChatGPT ;

