

## Chairman's Award - Team 3008

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2020 - Team 3008

**Team Number**

3008

**Team Name, Corporate/University Sponsors**

Kalani Robotics Academy/BristleBots/Bayer/DoD STEM/ImagineWorks/McDonald's of Hawaii&Kalani High School

**Briefly describe the impact of the *FIRST* program on team participants within the last five years.**

To recruit new members, we participated in a CTE Exhibition. We displayed three robots; one from FTC, one from VEX, and our T-Shirt Cannon. In addition to our robots, we displayed our Magma Crafts, items that the students from our team have created. Through this exhibition, we managed to grab the attention of at least 25 new students, recruiting them and guiding them into the start of a new pathway in the field of STEM.

**Describe the impact of the *FIRST* program on your community within the last five years.**

We promote STEM in our community by hosting and teaching robotics camps. With our Kalani Robotics Academy (KRA), Girls in Technology, Engineering and Computing (GTEC) Academy and Maker Academy, we've impacted hundreds of students across the state. We work together with ASYMCA to teach robotics classes for military students. Our effort to introduce STEM isn't limited to students. We engage in science fairs, robot demos, and selling STEM related kits at craft fairs, impacting the entire island.

**Describe the team's methods for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative.**

Our mission with the Make Mobile is to travel around the island and stop at different schools for a week to give students and robotics teams access to different resources. This year, we've impacted 10 schools and 100 students with this growing project. The Make Mobile is powered by 60 kilowatt saltwater batteries that are charged by solar panels to provide an environmentally friendly solution to uplifting underprivileged students all around the island.

**Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate**

Bristlebots are tiny toothbrush head robots that our team designed to introduce STEM to younger children. We take these to various schools on our island. At these demos, we guide the kids through the process of building it as well as allowing them to compete in competitions. The sheer joy on these kids' faces show they're excited for STEM, motivating us to do more. We also sell these online, so teachers can use Bristlebots in classroom curriculum

**Describe the team's initiatives to help start or form other FRC teams**

Our teams goal is to sustain the community that is there rather than create more teams that drop out two years later. In the year 2015, FRC team 2441 had dispersed entirely. The very next year we helped them to get back up. Seeing a veteran team drop out was shocking and we won't stand for it. That is why Team Magma creates a strong foundation for other teams so that everyone can experience FIRST.

**Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)**

We have helped out different teams, both on and off the island, from FLL teams to FRC teams. We started out with helping schools close to us, starting with Aina Haina Elementary as we help them to start their journey through FIRST with FLL and continued to help them through their journey. Continuing after, we helped out with schools within our district including Palolo Elementary, making sure that their game play will go smoothly

**Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program**

Ensuring that the base of each student is strong, our team hosts two different district tournaments at Kalani High School - one for FLL and one for FTC. At each tournament, we handle many of the organization and planning to make sure that every team that attends get the opportunity to see where exactly they can go as they continue following the stepping stones that FIRST provides. Through each hosted tournament, we are able to impact not just one team but the whole local FLL and FTC communities.

**Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)**

Through different forms of communications like Discord, Line, and email, we work to ensure the success of all FIRST teams both on the island and off the island. This year, we have been working together with a newborn Japanese team and are working our best to assist the whole Japanese FIRST Community from translating the manual to answering questions, we keep our lines open ready to help. We also make sure to keep constant communication with the existing teams across Japan to be ready to help.

**Describe your Corporate/University Sponsors**

We have 12 corporate sponsors that assist us with all the outreach and robot building we do. They are gracious enough to donate time and money into our team to ensure we are able to compete and reach out to our community. We have both local and global sponsors who help to sustain our team. We also work with non-profits in order to spread the word of STEM.

**Describe the strength of your partnership with your sponsors within the last five years.**

Our team develops a trusting relationship with our sponsors because our students reach out to them and set everything up giving it a unique and personal touch. To celebrate our sponsors and showcase our achievements, we annually host an event called Botting For the Future where they get to see where their support goes and what our team has accomplished in a year. Displaying robots and awards, all supporters get to see everything first-hand

**Describe how your team would explain what *FIRST* is to someone who has never heard of it**

FIRST is more than just a program where you build robots. It's a community that opens up more doors and teaches more skills. FIRST gives you the opportunity to meet new people and try new things that you wouldn't be able to otherwise. In FIRST students learn skills to use when they go into the real world. It is the one sport where everyone can go pro.

**Briefly describe other matters of interest to the *FIRST* judges, if any**

In partnership with the team behind the organization of FIRST Ladies, this year, our team is planning to host the FIRST Ladies Breakfast at this year's 2020 Hawaii FRC Regional - picking it up after 3132 Thunder Down Under had hosted this event at the 2017 Hawaii FRC Regional. With this breakfast, we will be able to reach out to a larger crowd to be able to encourage all females in FIRST to continue down the path of STEM and become the inventors of the future.

**For FRC teams older than 5 years, briefly describe your team's broader impact from its inception.**

Our focus isn't to start teams, much like how many others teams strive to do. We want the FIRST community in Hawaii to stay strong and forming teams isn't always what the community needs to stay alive. Numbers mean less than dedication and success, we want everyone to have the opportunities of being a part of FIRST and a strong base community is a deciding factor.

**Team Captain/Student Representative that has double-checked this submission.**

Carmen Lam

## Essay

Who exactly is Team Magma? Team Magma is just one of the many FIRST Robotics Competition teams that is based off the small island of Oahu. Having started out with just four people in 2008, the team has been steadily growing and developing a more sustainable system of ensuring the future of not just the participants of the team, but also the future of STEM in the local community and in FIRST Robotics across the island. Through constant support of their peers, each student on Team Magma spreads out quickly to work with various communities and individuals to encourage the evolving of every person in the STEM community.

With a team full of talented individuals and buds just waiting to blossom, we believe in the importance of ensuring that every individual on the team gets the opportunity to reach their potential. Thanks to the efforts of amazing alumnus like Eric Teshima and Grant Takara - our founding fathers of the team, Team Magma has become a team where every individual grows in every way that could be possible. Take one of our alumni who graduated from Kalani High School and our team in 2019, Noah Eckfeldt, not only a FIRST alumni but also a member of the community. Having first been inspired to join robotics through one of the many bristlebot demos that were hosted in the past, he has grown to become an amazing public speaker, designer, and a unique individual ready to inspire the future. Even while he was a part of the team, he continued to inspire others, especially shown in one of our promising juniors and lead programmers - Mija Wheeler.

Having started with FIRST Lego League Challenge, Mija has grown to become one of our best programmers and one of our Chairman's presenters. Through the encouragement of her peers and teammates, she has slowly grown from a shy and timid programmer to an illustrious public speaker and programmer. Being able to use her own experiences, she has been able to take her own teaching and spread out into the community through many different channels that robotics has given her, one of the many being through the various academies that the team runs.

Whether it is being stationed at home base at Kalani High School or going to the military bases or even traveling to other schools, Team Magma is working hard to ensure that everyone across the island gets an opportunity to learn more about STEM and how to become a part of the solution for a sustainable future. One of our most popular and well known academy is our Kalani Robotics Academy (KRA), where everyone and anyone can join over the summer and learn from one of our four classes that we teach.

Starting as young as first grade and going as far as eight grade, KRA is an academy that everyone can learn and enjoy at the same time. Alongside of this academy, we also host an all-girls academy that is typically held during the summer, which is sponsored through a grant from the National Center of Woman in Informational Technology (NCWIT). With this academy, or more commonly known within our team and community as the Girls in Technology, Engineering, and Computing Academy (GTEC), the females of our team focus on teaching more about programming and engineering. With hopes of increasing the numbers of female in this predominantly male field, our team continues to keep the tradition of hosting this academy.

Working together with the Armed Services YMCA, the team teaches young military children at reduced prices about how robots like EV3 can be used in their everyday life and how they can use it to develop a more sustainable future. Through partnership with this program, we gave these children the chance to explore the STEM field, a new field which they've yet to dive into.

Aside from our diverse academies, each year we host our annual Botting for the Future fundraiser - this year being our sixth. For this fundraiser we work with ImagineWorks 501c3, which is a non-profit organization created by our alumni that helps to support robotics teams across the island. This is one of our biggest fundraisers impacting over 200 people including sponsors and parents who support us. Through our robot petting zoo we display our FIRST Robotics Competition (FRC) robot and the rest of our robots from that year. It amazes everyone who comes around and gives our supporters an opportunity to see where their help goes into up close and personal.

Our team participates in differing craft fairs to expose a part of the community that wouldn't normally be introduced to the potential of STEM. At these events, we sell products - selling more than 1,000 products - to sustain our program and show the applications of laser printers, 3D printers and Computer Aided Design (CAD). Products that we sell include our 3D wooden Magma Crafts made from our laser printers as well as Bristlebots, designed through CAD. With these products we display the endless potential of the STEM future that is coming.

Keeping in mind of the future that needs to be sustained, the team created many years ago, something called Bristlebots - miniature toothbrush head robots that run on a cellphone vibrator. A product that we continuously are improving each year, these mini bots are great tools for children to be able to learn about STEM, robotics, and more. We take these bots across the island and have various demonstrations where we teach children how to build these mini bots and the science behind the miniature bots. With these bristlebot demos, we are able to inspire students to join robotics, as how many of the current students of our team came to know about robotics. Along with being a great STEM introducer for younger students, it also helps with fundraising our team into becoming a better version of ourselves.

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Along with our sustainable bristlebot project, we also have our Make Mobile. Outfitted with many machines such as 3D printers and laser engravers, the Make Mobile has become a mobile classroom that we can take anywhere across the island to teach different school and gives us a wider venue to be able to introduce STEM to many communities who have yet to experience the amazing field at its fullest. Stationed at our base at Kalani High School, many students of the school are continuing to use and learn with the equipment to make their imaginations become a reality, through one of the various engineering courses taught by our lead mentor, Bryan Silver. A 40-foot shipping container running on 60 kilowatt saltwater batteries and solar panels, the Make Mobile has proven to not only be an amazing method of introducing STEM further into the community but also a very environmentally friendly mobile classroom that won't give out till the sun does.

To go even further into our community, the team works with various schools and events to showcase our robots. Whether it be our FRC robot or the FTC robot or our EV3 robots, we showcase it all. Going out to our many feeder schools and hosting robot demonstrations gives many students the opportunity to see the many possibilities that FIRST gives to students and people of all ages. From the craft fairs we attend, we are able to ensure that not only younger students but also parents, grandparents, and the rest of the community gets to experience what it means to be a part of the STEM community and what it is to be a part of FIRST Robotics. Being able to introduce FIRST into the community has helped to encourage other schools, younger children, and the entire local community to support the various aspects of FIRST. The community interaction doesn't just stop at working together with the local community, in fact, Team Magma also works on ensuring the success and sustainability of keeping the FIRST community alive on the small island of Oahu. Starting from the youngest, the team hosts at least one FIRST Lego League (FLL) district tournament every year and continue to support FLL through volunteering at the State Tournaments - being one of the second biggest volunteer groups at the Tournaments. Following the stepping stones laid out, we also annually host at least one FIRST Tech Challenge (FTC) district tournament.

With our very own FTC team hosting this event annually, not only is the team able to enjoy the marvels of FIRST in a whole new perspective but we also are able to give the growing FLL community open opportunities to keep following the FIRST path to grow into becoming amazing FRC students. With the FRC community growing and the STEM field becoming more populated, the females of our team have a new objective this year: to successfully host a FIRST Ladies event at our home regional.

When FRC team Thunder Down Under came to the island of Oahu from Australia, they hosted an event to inspire the young ladies of FIRST through an event called FIRST Ladies Breakfast at the 2017 Hawaii FRC Regional. Unfortunately, after that one event, Hawaii had yet to have another of these events to encourage young women in STEM. Reaching out to the team behind the organization of FIRST Ladies, this year, Team Magma has been planning to host the FIRST Ladies Breakfast at this year's 2020 Hawaii FRC Regional. With this breakfast, the team is able to reach out to a larger crowd to be able to encourage all females in FIRST to continue down the path of STEM and become the inventors of the future.

Our team has found a sustainable way to stay alive and running at full power and for as long as possible. Inspiring from within and spreading out this inspiration to those around the local community and even farther to the FIRST Community, Team Magma is determined to make sure that STEM does not die - not now and not ever. With Team Magma constantly evolving like volcanoes and the world itself, there won't be any loss of those who know what FIRST is and what it means to be the inventors of the future. We don't just build robots for the future, we build people and our community for the future and forever more.