

FIRST Impact Award - Team 7428

2023 - Team 7428
Team Number
7428
Team Nickname
Gigawatts
Team Location
Fort Payne, AL - 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.
FIRST instills a passion in our Gigawatts for robotics, teamwork, community, and tackling challenges. Our first alumni graduated in 2021, but 100% of our alumni are majoring in engineering or computer science. Seniors this year will expand our impact on the world as 100% will attend college. We have 100% return from our alumni volunteering and continuing their work as volunteers, coaches, mentors, and even as FIRST Vista members. Our alumni have already won volunteer and coaches awards quickly.
Describe your community along with how your team addresses its unique opportunities and circumstances.
The Gigawatts reside in rural Fort Payne, AL. Our city of 14,000 is uniquely diverse, with 60% caucasian and 40% hispanic. The poverty rate is growing to 24% with only 5 large companies. Our school is Title I with 69% receiving free or reduced lunch. While our SWOT analysis illustrates these major threats, 7428 turns this into a strength. Our diversity reflects our community. We have written over \$60,000 in grants to supply our team with funds that are difficult to raise at our poverty rate.
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?
Beginning in 2015 the Gigawatts began changing the exposure of FIRST robotics in Alabama. There is not an area of AL untouched by a Gigawatts demo. At first we would seek out events, but now schools, museums, and FIRST teams request our demos and mentoring. Thus we have 15+ outreach events every year. Large exhibits at McWane Science Museum, Toyota Field, and STEMfest draw 1,000+ audiences. Hosting five FTC and FLL events each year, our impact is measured by the growth of FIRST in AL.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
FIRST teams desire to continue their FIRST journey into volunteering, mentoring, coaching, and having fun from experiencing the exemplary & exuberant efforts of 7428 members. There is not a FIRST in AL

event that occurs without Gigawatts members volunteering. Whether it be refereeing, judging, queuing, or our “Big Dog” emceeing we make positive impressions on everyone. In the past 3 years, we have collectively won 5 volunteer awards. Come by our pit, we are easy to find, it’s where the fun is!

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

The Gigawatts are actively coaching three FLL teams. These teams have won qualifiers and placed at state & invitationals. We are consistently asked by FIRST in AL to mentor new FRC rookie teams. We assist two other rookie FRC teams. We started 1 FTC team and have mentored three. We have hosted or helped organize over 30 events in the last 3 years including the first FTC Kickoff in south AL. We conduct training at the AL Coaches’ Workshop, run robotics camps, and publish tutorials on our website.

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?

Based on the Gigawatts’ achievements our school system has now adopted our FIRST based curriculum K-12. In addition, we have competition teams from 5-12. Our extensive outreach appearances inspire others to join robotics. We have heard consistently “it is because of your team that we started our own team.” Our engaging outreach has placed us in a position that we now are fielding requests to exhibit at science museums, schools’ stem nights, & community events. Our love of our work is infectious.

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

The Gigawatts has key partnerships with GH Metal, Siemens, & TVA to provide funding, mentoring, machining services, and volunteers for events. Mcwane Science Center & Earlyworks are outreach partners for Engineering Day and Girl Day. Our unique enthusiasm and efforts attract the best mentors. This list includes NASA scientists, software developer, aerospace engineer, arts teacher, and mechanical engineers. Created a mutually beneficial relationship with the Univ. of AL Astrobotics team.

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

7428’s key roles are filled with females and/or POC. We demonstrate our open hearts at every event we host. Our diverse outreach team provides an excellent example of how FIRST is for everyone. Our exhibition at Girls in Engineering Day at McWane demonstrates and teaches STEM lessons to over 1,000 inner city female students. We target rural areas that have high POC populations, exposing them to STEM for the first time. Lastly, we teach summer camps in rural areas to educate youth on STEM.

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

Our robotics curriculum impacts over 200+ students. Robotics and computer science are now offered K-12. This creates a pipeline of students that begin FLL teams at 5-6, FTC 7-8, and continue into FRC 9-12. Gigawatts coach and mentor the next generation, becoming role models for the younger kids. Financially, our school board now allots money for our program and we have strong relationships with our sponsor companies. Our mentors' appreciation gifts keep them returning year after year.

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

There are not many donors in our rural area. We have great connections with three of the five major companies. They supply us with funds, materials, and mentors. In return, 7428 supplies qualified interns that become future employees. The Gigawatts actively write grants. We have been awarded over \$70,000 in grants over 3 years. Sponsors love to see their time and money being used to serve a greater purpose. Gigawatts fulfill this desire by showcasing our season at company showcases each year.

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

Our SWOT analysis shows programming to be the main weakness. We have made large strides in this area. We recruited a software developer to mentor us & his training & guidance have made a tremendous impact. We have challenged our programmers with new tasks as soon as they master old ones. They document their work and we use this to create tutorials for newcomers. We also challenged our programmers to make apps and compete in other competitions. This experience is increasing our knowledge base.

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

Our goal is to increase STEM opportunities in AL. We hear at our extensive outreach events, "I wish they had this when I was in school." Our journey in FIRST has dramatically improved our skills, confidence, & opportunities. We feel strongly that every student should have the same experience we had if not better. We tackle this significant challenge with outreach & camps across the whole state. Also, we have presented for government officials which has helped raise the funds offered to schools.

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.

Huntsville is our largest city & is known for STEM. It ranks highest in salaries & education. The Gigawatts from rural AL are changing that dynamic. No FTC or FLL state events had ever been hosted outside of Huntsville before. Based on our capabilities, we are now hosting FTC/FLL scrimmages, qualifiers, & state championships. We held the first dual FTC & FLL State championship. This provided FLL members a chance to see what the next level is like & encourage them to continue with FIRST.

Essay

What would invoke the desire to wake up before daylight, board a bus in the cold morning, travel hours away, work hard all day, barely have time to eat, come back home when it is dark, do it for free, & be excited to do it again? It is this incomprehensible mystery that drives the Gigawatts. If you ask, "What makes you want to be on the Gigawatts?", you will hear: learning skills, making friends, connecting with our community, or simply having fun. But all of these values can be gained without 4,000 hours of volunteering. There has to be more that drives students to host FLL & FTC State Championships on the same day in the same location with over 1500 people in attendance. In our eighth year, the Gigawatts are building a legacy & this shared mission creates a bond like no other. It is this inexplicable alchemy that has formed a furious fire in our heart that will never die. It is the magic behind our team. It ensures that we will continue to build, teach, & share this passion at every chance. We measure success in the lives we change: A programming prodigy from a low income household transferring to a new school. Now excelling as a programming leader. Bringing new solutions to the Gigawatts robot. Blazing a path to college & beyond that he never thought was possible. Because of FIRST. A first generation American becomes an established app developer. Gaining confidence in his abilities & becoming the first winner of the Congressional App Challenge from our district. Because of FIRST. He doesn't even speak English. This Gigawatt became a lead mechanic. He is a role model for English Language Learners. Demonstrating that both academic & social success is attainable. He has shattered all preconceived notions. Because of FIRST. Internships & jobs. Our technical & creative design skills are providing jobs for our students now. Many are getting paid jobs for their skills & companies are seeking us out for projects. Gigawatts members are connecting with meaningful careers. Because of FIRST. How are we making these impacts? We would like to highlight some of the key components of our unforgettable team. Education Education is vital for our global community, & FIRST is a curriculum that best produces skills & capabilities that will help the world thrive. We have introduced FIRST & mentored teams across the globe, all while inspiring school districts across AL to join us in this life changing adventure. In addition to helping create teams, we have implemented an education curriculum that incorporates FIRST aspects with computer science to reach a wider audience. This curriculum is now being used in Fort Payne City Schools from Kindergarten through 12th grade. We actively coach two FLL teams, started & coach a FTC team while also mentoring 15. We are actively supporting 3 FRC teams, including 1 team from North Carolina. We have presented at robotics conferences to teachers including one at Auburn University. We developed an innovative strategy to reach parents & kids by partnering with libraries & science museums to conduct robotics camps. Once they see what FIRST can offer, parents are eager to learn more. Advocacy It is important to share our successes with representatives in local, state, & national governments. It is with this in mind that we have hosted our Governor, state senators, & representatives at Gigawatts showcases. Our state school board member is now one of our strongest advocates. Through our success she has been able to spread acclaim for what is happening in her district at the state level. We have hosted our federal senator & house representative. It is an extraordinary moment to see our senator tell his aides to let him stay because he was having fun driving the robot. We are providing a model of what a robotics program can do for the next generation workforce & why elected officials should support FIRST. We have seen the allocated money for robotics programs grow each year due to our efforts. Diversity We strongly believe that diversity is a critical component of a global learning community. Our school population is diverse with 40% hispanic students. We are proud to say that our team reflects this. We feel the world is becoming smaller, & it is vital to learn about different cultures & how to collaborate despite differences. 25% of our team are females, & our FLL & FTC feeder programs are equal in gender. Robotics is for everyone. We leave behind stereotypes that science & math are for boys. We want to shatter the perception that certain jobs or roles are for certain people. We demonstrate our appreciation for diversity by having people of color & girls in key roles of leadership. Our president has always been female. She represents us nationally with a women in STEM award against

4,000 applicants & was a Dean's List Finalist last year. It doesn't end there, our drive coach, website designer, \$ app maker are all filled with POC or female leadership. FIRST Growth & Support Our FIRST journey started eight years ago with FIRST LEGO League. Our determination has led to many accomplishments. FLL State Championship, 2nd place FLL State Championship, International Invitational awards, Rising Star Award, FRC Rookie Inspiration, NCWIT National Award, Congressional & Governor's App Awards, Entrepreneur Award, & Southeastern Chairman's Award. However, our legacy of serving as role models to others is the highest award we could achieve. The act of serving & giving back is an integral part of why we keep working year after year. Awards are nice, but seeing the difference you make in another person's life & the reputation we have built in our state are priceless. The Gigawatts are compelled to pass on our passion. Our team has hosted many FLL qualifiers & FTC scrimmages. We are proud to have hosted the FLL & FTC state championship in Fort Payne last year & the FLL State Championship this year.. It is the first time the events have been held outside of Huntsville. These events have been successful due to our efforts to make the best possible event for FIRST in Alabama. We continue to support our family of FIRST programs with enthusiasm & devotion. Our members continue to coach & mentor FIRST teams & we have an army of volunteers at every FIRST event. Our future goals are to expand FIRST programs in AL & there are several city schools that are prime candidates to host FIRST teams.

Partnership & Sponsorship We believe that our community is part of our team. It takes faculty, administration, mentors, parents, local businesses, & corporations to be involved. We create partnerships with each of these stakeholders. Making connections with our community enables us opportunities to bridge the gap from student to professional. The skills we learn through FIRST are directly benefiting stakeholders. They are investing in their future. During the Covid pandemic, we felt the need to give back. We created a campaign to raise money called "Feeding the Frontlines!" We used the money to buy lunch for frontline workers from local restaurants that were hurting from closures. We were able to thank those helping us while supporting those in need. We raised over \$3,000 for our project. The Fort Payne Sheriff's Department contracted us to build a robot. Our robot is designed to drive in random patterns autonomously on the shooting range. This sets up a scenario for marksmen to practice their skills in a real world situation. In our initial prototype test, the FBI sniper complimented our robot saying "that was tougher than anything I ever did in sniper school." Our newest service project works with local organizations to help provide food to needy families. We have delivered groceries & supplies through the Marked of Life organization. We set a goal to develop relationships with different universities & organizations to increase mentorship & volunteers for our team & FIRST. We are proud to say that we have had great success. We have created mutually beneficial relationships with the University of AL Astrobotics team, UAH Engineering, NACC Engineering, & Auburn University. In addition, we have recruited VFW & the American Legion to supply mentors & volunteers around the state. Our sponsorship consists of several local companies, our generous school board, & grant awards. In the last three years, we have been awarded over \$70,000 in grants. These funds have helped us quickly transform from a rookie team with limited resources to a competitive team working to reach the top.

Outreach We love FIRST & know others will too! It is such an amazing community of people; we believe if we can get you to an event or demonstration, you will be hooked! Time after time we have created lifetime members or volunteers through these experiences. We love to spread our enthusiasm through demonstrations & presentations. We have done demonstrations or taught clinics at Brickapooloza, Huntsville STEAMFest, Space & Rocket Center, civic clubs, fairs, National Space Club, McWane Science Center, & the list can go on. We have created two exciting pathways for outreach this year. One was to create relationships with every science museum in AL. Currently, we have worked with science museums in each major city in north & central AL. Our other idea was to bring robotics camps to libraries. The last two summers were great successes & now have many more lined up for next year. As Peggy Carden, Educational Director McWane Science Center, said "it is not Engineering Day without the Gigawatts & your robot!" A legacy is

what we are creating. Based on our hard work & dedication the members coming up will now have resources & support we only dreamed of when we began. Our 20 plus year superintendent just retired this past year. When asked “what was your greatest accomplishment?” He responded “being able to support the robotics program & all they have achieved.” Each Gigawatt contributes their all, & together our legacy will impact the world. ;

