

Chairman's Award - Team 3284

Team Number

3284

Team Name, Corporate/University Sponsors

The Boeing Company/Speedline Technologies/Camdenton R-III Schools/Nihon Superior/Camdenton R-III Afterschool Services/STEMfinity/Nvidia/Gerbes/Metaltech/Community Foundation of the Lake&Camdenton High

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2016/2017 year and the preceding two to five years

LASER 3284 members share how they are impacted by FIRST: Promote Gracious Professionalism®, Coopertition®, teamwork, academic rigor, introduces STEM career paths, inspires dedication, prioritizing, mentoring, volunteerism, perseverance, goal setting, teaches that failure is a learning experience, promotes lifelong learning, sharing of knowledge, spreading the mission of FIRST, builds relationships that will last a lifetime, & encourages students to find solutions to the difficult questions!

Describe the impact of the *FIRST* program on your community with special emphasis on the 2016/2017 year and the preceding two to five years

The implementation of all FIRST progressions has encouraged district-wide emphasis on STEM. LASER's unprecedented growth has resulted in 250, or 1 in every 14, students in our district being on a FIRST team. We host official events (1 FLLJR, 1 FLL, & 2 FTC), promote safe practices in the FIRST & local communities in partnership with MO State Highway Patrol, communicate with our legislators, support numerous community organizations, & are coordinating with MSHSAA to make FIRST a state activity.

Team's innovative or creative method to spread the *FIRST* message

LASER uses radio, TV, magazines, social media & websites to share the core values of FIRST. LASER has given over 175 presentations locally, in our state, and nationally. LASER is the force behind FIRST Robotics Month in MO (April) and has been featured at the Ozark Maker Faire & International Optimist Maker Day. LASER hosts Show Me Robotics at MO State Fair and annually invites the community to join the fun at 4 annual, official FIRST events hosted by LASER.

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

LASER takes being a role model seriously, for younger LASER members, our community, & state, by always practicing Gracious Professionalism and perseverance. LASER mentors more than 70 FRC, FTC, FLL, & FLLJR teams and has started over 60 FIRST teams across MO. LASER members always use correct safety procedures & are required to pass a safety test & complete CPR and AED certification. LASER is always present at community events and is dedicated to sharing the FIRST core values on a global scale.

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

LASER has started 8 FRC team in Missouri and welcomed them into our facilities to observe and learn more about FIRST. We share information, parts, robots, & support throughout their rookie season and beyond. LASER has given over 175 presentations to share the mission of FIRST and help schools to start new teams. LASER has invited rookie and potential FRC teams to off season events and allowed them to borrow our practice robot to participate in off-season events and see what FIRST is all about.

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

LASER has started 56 FLLJR, FLL, and FTC teams across the state and mentors 70 FIRST teams. We make FIRST less costly and more accessible for many teams by hosting the annual Mid-MO FLL & FTC Qualifiers & FLLJR Expo in central Missouri. LASER has presented at the MO Interface Conf., MO Superintendent's Conf., & other events where we have been able to share the FIRST programs with educators to help more schools start FIRST teams. LASER coaches represent FIRST on multiple state committees.

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

LASER's initiatives on assisting other FIRST teams with progressing through the FIRST program include presenting at numerous state conferences, sharing resources and experience, and hosting events that offer learning opportunities such as our FLL coaches training camp and youth FLL & FTC programming camps. Also, LASER often visits and communicates with our legislators to discuss how they can become involved with FIRST and make FIRST more accessible to students everywhere.

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)

LASER mentors over 70 FIRST teams by traveling to other schools, sharing our knowledge, communicating through email and skype, and inviting teams to our practice space. LASER members often attend the meetings of the teams we mentor to offer guidance. Also, LASER has shared expertise on programming, safety, and coaching through presentations and camps, specifically our FLL programming and coaches camps and the 4-H conference at which LASER members taught FIRST-oriented classes.

Describe your Corporate/University Sponsors

Sponsors: STEMfinity, NiHon Superior (Japan), NVIDIA, Camdenton R-III Schools, MetalTech, 4-H, Optimist Club, Lake REgional Health Systems, Scott's Concrete, Speedline Technologies, Boeing, Camdenton R-II Afterschool, Crossroads, Gerbes, and the Community Foundation of the Lake. Locally, there is zero industry, so LASER has reached out in our community & internationally to support and sustain our progressions of FIRST programs through innovative use of technology & media.

Describe the strength of your partnership with your sponsors with special emphasis on the 2016/2017 year and the preceding two to five years

LASER has been able to develop and maintain strong partnerships due to the willingness of the team to give back to the community that has supported us. LASER hosted a STEM summit for Central, MO where important partnerships were developed with legislators, business leaders, & city officials who supported FIRST and its mission. Partners are involved with the team members on a daily basis as mentors. They are more than financial partners, they are a part of our LASER family.

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

LASER would describe FIRST as a program that promotes innovation, creativity & teamwork through the exploration of STEM. FIRST inspires students all over the world to think outside of the box and engage in challenges that allow them to discover new things and develop 21st century skills. FIRST teaches that graciousness and professionalism are always the best option, regardless of circumstance. FIRST is a testament to how hard work, dedication, and perseverance are incredibly rewarding and fun!

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

LASER annually works with the MO Governor's office to proclaim April to be FIRST robotics Month in Missouri and is continuing to work with MSHSAA to make FIRST an official, state school activity. In addition, LASER is proud to have 2 Dean's List Finalists & 1 Dean's List winner. LASER has been named one of the fastest growing FIRST programs & was featured in a FIRST case study for being a rural program with rapid growth, sustained progression of programs, & great outreach efforts to grow FIRST.

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

Kylie Becker

Essay

What if student involvement in FIRST was the answer to the world's problems? What if all students recognized their potential to change the world? What if people presented solutions rather than always posing questions?

Posing the Question: "What if..."

"What if all students had an opportunity to engage in innovative and relevant challenges?" After eight years, FIRST has made the answer clear to Camdenton 4-H LASER (Laker After School Science, Engineering, and Robotics) team 3284; the students will thrive! As the first FIRST team in central Missouri, we have overcome many obstacles. The absence of industry, small population of 3,900, and rural characteristics of our area present a unique challenge when recruiting sponsors and professional mentors. Despite such challenges, LASER now includes 1 FRC, 4 FTC, 14 FLL, and 12 FLLJR teams and 1 in every 14 students in our district, a total of 250 lives changed.

What if inspiration knew no bounds?

We continue to grow by promoting FIRST and STEM in our school, community, and state through presentations, parent

involvement, community service, and volunteering opportunities. Our rookie team was made up of 21 students and 3 mentors. This year, LASER 3284 includes 37 students, 17 mentors, and countless involved parents. What if students from all walks of life recognized their potential? 3284 has reached a 54% to 46% boy to girl ratio and over two-thirds of our team are underclassmen. Furthermore, the impact of the FIRST LASER Robotics program is reflected in the fact that over 92% of LASER graduates have pursued STEM careers. Our sustained growth is a result of the LASER FTC, FLL and FLLJR programs which have encouraged more students to get involved at a young age. We know that LASER's inclusion of all four progressions of FIRST will continue to inspire students to find their future in STEM.

What if more students had the opportunity to be on a FIRST team?

LASER members have relentlessly dedicated themselves to promoting and spreading STEM and FIRST in order to share the experiences offered by FIRST. LASER has started 8 FRC teams and 56 other FIRST teams and mentored 70 FIRST teams. What if more students had experienced FIRST? LASER has started several teams by inviting groups to offseason events and giving them the chance to experience FIRST prior to their first season. We did just that with team 6424, the Stealth Panthers, after Dean Kamen expressed a need for a team at the Knob Noster Whiteman Air Force Base. After providing a group of Knob Noster students with a coach and letting them drive our practice robot in the competition, they were hooked! We now regularly mentor the team through skype, email, and site visits.

In addition, 3284 has started and mentors 2 international teams. We sent LEGO EV3 Mindstorm kits and the 2015 FLL challenge with mentors to Guadalajara, Mexico and Santo Domingo, Dominican Republic. LASER has kept in contact with these teams through email and skype. LASER has also reached out to teams at the FIRST Championship including an FTC team from Shanghai and FRC team 5654 from Israel by allowing them to borrow batteries, tools, and other materials that would have been expensive to ship.

Another way LASER has practiced gracious professionalism and cooperation is by helping FTC team 8856 when weather sent them home early from our Mid-MO FTC qualifier. One of our FRC members graciously agreed to drive their robot through the rest of the competition independently, even though their robot utilized two controllers and he was without a coach. The fact that he lead them to be the fourth alliance captain proves that everyone wins with cooperation!

What if communities, businesses, and schools engaged in STEM opportunities?

LASER is getting more students, youth, and community members involved in FIRST by hosting events, camps, and trainings. Camps, such as our FLL and FTC programming camps, FLL coaches trainings, and Navy Seaperch camp, help us raise interest and start new teams. LASER FLL and FTC Programming camps are an opportunity for 4th-8th graders learn to program. Our FLL coaches trainings teach prospective FLL coaches how to build and program EV3 Mindstorm robots with sensors and how to start a team. The SeaPerch camp allows young students to build and program underwater robots and navigate an underwater obstacle course.

For the last 6 years, 3284 has further promoted FIRST and STEM by co-hosting Show Me Robotics at the Missouri State Fair. Here, LASER introduces over 10,000 fairgoers to FIRST through our FRC competition, FTC and FLL rumbles, and FLLJR Showcase. In addition, all 4 LASER progressions have been featured at the Ozark Maker Faire alongside technological and innovative companies.

What if we could spread the impact of FIRST beyond our school and community?

One of our favorite traditions to share the mission of FIRST in our state is requesting that our governor proclaim April to be FIRST Robotics Month in Missouri. Since 2012, the governor has annually fulfilled our wish; this year, newly-elected Governor Greitens has continued the legacy. In addition, the LASER progressions annually represent FIRST at MO STEM day at the Capitol. What if FIRST held a status equal to sports in all schools? LASER is working with MSHSAA to make FIRST Robotics an official high school activity to create more opportunities for Missouri schools to start FIRST robotics teams and for existing FIRST teams to gain support from their schools.

LASER has given more than 175 presentations to teachers, students, administrators, elected officials, and community members to share the FIRST core values. Some of LASER's most impactful presentations include the 2015 World Championship VIP Dinner, MO Interface Conference, MO DESE Afterschool Association, and the TechItOut Conference.

Essay - page 2

LASER's long list of media coverage contributes greatly to our efforts to expand STEM and FIRST. The Missouri School Boards Association showcased the LASER program in a video that was sent to every Missouri school board member and over 600 superintendents. LASER 3284 is also being featured in a FIRST case study for our rapid growth, sustained progression of programs and outreach to grow FIRST in rural areas.

LASER proudly hosts and runs 4 annual official FIRST events, including the MID-MO FLL & FTC Qualifiers, an FTC meet, and the Mid-MO FLLJR Expo. Thus far, LASER has hosted a total of 10 official FIRST events! These official FIRST events make FIRST more accessible and reduce travel expenses for central Missouri teams. Prior to our events, the closest competitions for these teams were 3 hours away in Kansas City and St. Louis.

What if the world understood that FIRST is more than Robots?

LASER has always prioritized community service and relationship building; we recognize that our mentors are more than teachers, our sponsors are more than financial support, and our parents are more than our biggest fans. In fact, LASER parents have dedicated over 20,000 volunteer hours through FIRST LASER. In addition, our sponsor Speedline makes a donation for every hour that their employees mentor our team. LASER continues to establish and grow relationships through fundraisers, participation in community events, and local presentations.

LASER gives back to our community by supporting local organizations. LASER has supported Citizens Against Domestic Violence (CADV) by decorating and stocking a children's room at their shelter with STEM-related games, books, and toys and participating in their Chili cook off. Our power of the penny fundraiser purchased canned food to stock a local food bank. In the spirit of Recycle Rush, LASER hosted a community wide, low-cost electronics recycling drive. Lastly, our long-standing tradition of safety has inspired us to share water safety in local elementary schools. Because the Lake of the Ozarks is the most dangerous lake in the United States, we have partnered with the Missouri State Highway Patrol to give life jackets to about 400 kindergarteners in our school district.

Last year, we worked with our school's Green Club to employ a school-wide recycling campaign. We decorated the recycling bins with facts about the engineering of recycling and placed them around the building. We also supported our local animal shelter at one of their adoption events and returned to the CADV chili cook-off with an FLL robot that delivered chili!

This year, LASER stepped up to answer the Christmas wishes of two local boys who were removed their home just before Christmas. We sponsored a school hat day, during which students were invited to donate \$2 to wear a hat during the school day in support of these boys. The response was overwhelming and we raised over \$600; enough to buy bikes and clothes for each child. Because we had so much money left over, the team decided to use some of the extra funds to help FRC team 5871, Chickadees Robotics, rebuild their team after they lost all of their materials and electronics in a fire. Inspired by Dean's Founder's Reception Speech, 3284 chose to use the rest of the money to support our local police department and disadvantaged youth. We purchased and donated backpacks and stuffed animals to be given to kids with hopes that they will provide comfort in traumatic situations.

What if we could change the world?

FIRST has inspired LASER to share our passion for Science, Technology, Engineering, and Math in our school, community, state, nation, and world. LASER is proving that growth backed by passion cannot be contained or limited by environment or circumstance. We are expanding the range of the FIRST core values by starting new teams and creating new STEM opportunities. LASER is demonstrating how FIRST is more than robots through our community service. What if students no longer felt the need to ask "what if," and instead knew that their hard work and dedication, learned through FIRST, gives them the capability to achieve their highest aspirations?