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FIRST Impact Award - Team 7426

2024 - Team 7426
Team Number
7426
Team Nickname
PAIR OF DICE ROBOTICS
Team Location
Las Vegas, NV - 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.
Pair of Dice partners with industry leaders like John Deere and Simply Thick mentor our students. 100% of the past years' seniors and 90% of all alumni have pursued further education in STEM or have a STEM career. Two alumni have committed to mentoring, and two have accepted jobs with FIRST Nevada. Pair of Dice has also inspired all 50 of its current members to pursue STEM-related activities outside of the team.
Describe your community along with how your team addresses its unique opportunities and circumstances.
Las Vegas faces many challenges like high poverty and homeless rates. Pair of Dice has provided food banks- Three Square and the Equality Center- with canned goods. We partnered with Savers to organize a clothing drive receiving over 3700 pounds of donations. With only 35% of women in STEM careers in Nevada, Pair of Dice strives to improve female engagement. Currently, 50% of team members are female/non-binary. We have hosted a "Girls in Tech" event, bringing stem to 150+ middle school girls.
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?
Pair of Dice has attended 3 "Pack Expos" and one "Science Expo" reaching 3000+ people. At this year's program showcase our members reached 50+ industry professionals and the district's superintendent. This event was televised on all local news networks reaching over 10,000 people. We have also presented our Advanced Manufacturing program and team to over 1000 incoming students at open houses and orientations.
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 members go out of their way to volunteer for various FLL and FTC events. Pair of Dice has also hosted and ran or co-hosted at least one FLL/FTC competition every year. Our students have hosted online FRC workshops, including Rookie Essentials, Event Preparation, and Autonomous Programming. In addition to hosting Nevada's first-ever "Spring FRC Conference." Our programming team has also hosted a workshop for a class of UNLV students looking to mentor teams in our community.

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

Pair of Dice has assisted over 200 FIRST teams in the past three years spanning 6 countries. 100+ are FLL teams. This year we will be hosting two international teams in our workshop. This year we mentored three FLL teams and in total, we have mentored ten. Pair of Dice team members ran FLL team 54574's offseason event last May. Pair of Dice has assisted three FTC teams this year. We also store and transport FIRST FRC Kits for Brazilian teams 1772, 7033, 6902, and 5800 every year.

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?

Pair of Dice's "Jump Start STEM" initiative has bettered the lives of over 1000 young children this year. We partnered with a preschool to bring STEM to children in special and general education classes. We partnered with the Children's Discovery Museum to inspire kids through the use of driving, operating, and programming VEX Robots. With the future publishing of our children's book, Space Whiskers, we expect these numbers to continue growing.

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 have invited corporate sponsors like Geo Tab and Simply Thick to teach our team members about real work experiences. We also fostered partnerships with a Tesla Gigafactory and 10 other manufacturing companies that interview our graduating seniors and consider them for employment. We have also hosted annual job fairs allowing our students to showcase their knowledge to industry professionals.

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

Pair of Dice has increased female and non-binary participation by 20% from previous years. In the offseason, we had an "All Inclusive" day, when we had just our non-binary and female team members in the workshop. We created, hosted, and ran Girls in TECH, an event with over 180 8th-grade girls. They learned about 6 STEM-related topics. Whenever performing at events we always ensure that we have a different group of students so everyone can have an equal opportunity to participate.

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

Our team hosts workshops throughout the offseason to assist our new team members in learning new skills for the build season. Our leaders divide students into sub-teams making it easier to communicate effectively and giving us the ability to build more extensive knowledge. We document every event and

initiative we perform to ensure that students are well-prepared and don't repeat previous mistakes. We make sure information is communicated to parents, sponsors, and other FRC teams.

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

Pair of Dice has created strong connections with our old and new sponsors. This year we hosted our first annual sponsor night to keep our sponsor up to date on our business and technical plans. We have also created thank-you gifts for our sponsors to show them how much we appreciate them. Our team has handed out business cards and brochures to 100+ companies at all our presentations. Our team also sends out monthly newsletters to keep sponsors updated and engaged on our latest events.

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

One of our biggest challenges in previous years was diversifying the skills among our members. We have increased the number of leadership opportunities by allowing students to earn positions throughout the season resulting in underclassmen taking on bigger responsibilities. We continue to increase the quantity/quality of our preseason workshops. This year we implemented a mock-build season, allowing students to utilize their skills in a more intense environment to prepare for build season.

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

We inspire young engineers through our career and technical program within our school. In the past two years we have increased the amount of certifications we offer students from 3 to 20 different certifications based on Automation, Engineering, and industry safety. In just 20 months, we have awarded students with over 200 certifications. We made partnerships with industry giants such as Ocean Spray and Tesla to give our students job opportunities after high school ranging up to \$70k a year.

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.

Pair of Dice is proud to have partnered with FRC 7424 to create and run the first FRC Off-season event in Nevada, designed to help rookie teams get started. As well as provide more experience to other young students and mentors.

Judge Feedback

Who/When

Feedback

Mar 30,
2024
08:48:58
PM EST

Were our points clear and understandable? Was anything unclear or not explained thoroughly enough?

An area the team has an opportunity to improve.

Something that really impressed the judges.

Essay

The Roll of the Dice What does it mean to take a chance? A chance is “a possibility of something happening.” But at Pair of Dice, a chance is to place a bet on yourself, even when all the odds are against you. Life is a game of chance; a series of moments where we must decide whether to play it safe or roll the dice in pursuit of something extraordinary.

Dealing a Winning Hand (to our community) Pair of Dice knows that we are only as strong as our community, and therefore there is no limit to how much we can do to help. Pair of Dice teamed up with Savers, a thrift store in Las Vegas with “one of the best upcycling programs in the world”, to organize a clothing drive. We raised over 3700 pounds in donations allowing us to assist the environment and provide low-cost clothing to our community.

In Las Vegas, 15% of the population lives below the poverty line. It is reported by Three Square Food Bank, that in Southern Nevada, “one in six children live in food-insecure households.” To support one of our local community food banks we organized a canned food drive that directly helped the Henderson Equality Centers, which provides a food pantry, support groups, STEM opportunities, and a wellness clinic to all community members. Pair of Dice was able to raise over 400 cans/food items for their food pantry which is available to people with low income, HIV, people that are on SNAP, WIC, or TEFAP, and families with youth.

In response to the historic challenge of a gender gap in STEM fields, where only 28% of workers are female, our team prides itself on creating and maintaining a diverse and supportive environment.

This year, almost 50% of our team members are females, an increase of almost 20% from the previous years. This was no accident, this year our team focused on recruiting and engagement opportunities that represented young women in STEM.

To face the underlying challenges of representation in STEM we incorporated an ‘All-Inclusive Day’ into our usual pre-season workshops. In which female and non-binary students were invited to learn about programming, hand/power tools, and 3D design. This approach aimed to develop a less intimidating environment where students felt comfortable and accepted. We saw that after this event students felt more confident and were more willing to take on bigger tasks

However, this was not the end of our mission. In addition, Pair of Dice created and hosted a new event, Girls in TECH. The workshop brought 160+ female and non-binary middle school students to our school to participate in interactive, hands-on STEM lessons. Our workshops consisted of activities in 3D design, electrical circuits, computer science, and medical professions. Additionally, we invited an engineer from our sponsor, ClearWater Paper, to our Girls in TECH event to be our keynote speaker. Doing this allowed us to correlate the activities done with industry knowledge from the workforce. Along with showcasing a variety of STEM fields, we were able to inspire students that there is a place for anyone within STEM. With the event being greatly successful, we have already made plans to host Girls in TECH annually. Betting on the Younger Generation Early exposure to STEM activities heavily influences future career choices, as shown by a recent Purdue University study. This inspired our JUMPSTART STEM initiative which aims at offering younger students more opportunities in STEM through hands-on learning and foundational STEM concepts

We partnered with a local preschool that teaches children ages 3 to 5 in both general and special education (ECI Early Childhood Inclusion). Our goal was to provide and lead once-a-month STEM-

related activities during the school's family engagement day. Children learned the fundamentals of physics and construction by building towers, bridges, and catapults out of normal household items. The family engagement days allowed us to target both the children and their families, giving parents the foundational tools to continue inspiring them using STEM concepts.

Our team has also created a children's book, *Space Whiskers*, that teaches kids about the importance of STEM. The story follows a girl who assists an alien cat in fixing its rocket ship to get back home utilizing household items. Readers learn problem-solving skills, innovation, and other engineering principles.

We also had the opportunity to work with the Children's Discovery Museum to bring STEM activities to 500+ kids in the Las Vegas Valley. Our focus was a discovery lab where children had the chance to learn the components and functions of VEX robots and how to operate them. To further challenge our older learners we had them create programs utilizing sensors and encoders.

With our focus on jumpstart stem, we have been able to reach over 1,000 participants. With the publishing of our book and the expansion and continuation of our current efforts, we expect that number to continue growing in the coming years.

Furthermore, have spread awareness of STEM and the values of FIRST by showcasing our robot at multiple EXPO events and community fairs, allowing us to reach over 3,000 people in the past six years.

Stacking up our odds From the hard work and dedication of our mentors and members, our Advanced Manufacturing program within the school is a jackpot opportunity for our students. Students in this program gain skills in electrical circuits, pneumatics, 3D Design, and Programmable Logic Controllers (PLCs). Our Advanced Manufacturing program offers 17 Industry 4.0 certifications from the Smart Automation Certification Alliance (SACA), an OnShape certification testing the skills of CAD, a FANUC robot operation certification, and an OSHA-10 General Industry Safety certification. In the past 20 months, students have been awarded more than 200 certifications, making it one of the nation's most knowledge-intensive high school programs for career development. Our team plans and hosts annual job fairs utilizing our partnerships, resulting in students receiving job offers up to \$70,000 a year straight out of high school. Our success attracted the attention of the district's superintendent who was featured on PBS Student Spotlight as he engaged with our students and complemented our facility and program. The broadcast reached thousands of people. This has allowed us to connect with manufacturing companies in our area as a reputable industry-level program, fostering more opportunities for our students.

We believe that our partnerships with companies will drive us to the next level, which is why we have teamed up with several companies who believe in the culture of our team. Geotab and SimplyThick have led workshops teaching about the best business practices, which has helped us gain a stronger understanding of the importance of business and networking. With their help, we have increased our overall grasp of social media and advertising.

Three-of-a-kind (Three levels of FIRST) Pair of Dice has hosted and co-hosted an FLL or FTC competition every year since our rookie season. Even when hosting the largest FLL event in Nevada with 59 teams, we were recognized by the FIRST NV coordinator that our volunteers "raised the quality level of each competition due to their experience... professionalism, and work ethic".

We collaborated with another Las Vegas FRC Team 7424, to create Nevada's first off-season event, Sin

City Showdown. This allowed rookie teams to ease into their first build season. Knowing how often it can be intimidating to communicate with other FRC teams; Sin City Showdown was a pipeline for teams to build connections with other local teams.

Last May we ran the Tomiyasu Dragons offseason FLL event. It was a competition dedicated to raising awareness for robotics after an underfunded public school had trouble competing due to a lack of experience. With our help, they competed this year ranking more than 30 places higher than last year.

This year, we volunteered at 3 FLL workshops guiding teams in robot building and coding. As well as, hosting and organizing Nevada's first FRC Spring Conference and leading 4 workshops. We were able to assist 60 participants from 8 different teams in the state. This conference taught all the essentials of robot construction, awards, competition operations, and more. To ensure that all this information remains available to all teams, we post all our workshops and extra resources on our website, pairofdice.vegas.

We know that a mentor's guidance can be a winning hand. Pair of Dice has mentored 10 FLL teams by running personalized workshops and working one-on-one with students. In addition, we have assisted over 100 FLL, 3 FTC, and 40 FRC teams including ones from Brazil, Mexico, Netherlands, Australia, and Turkey. Each year, before competition season, we assist international teams with travel arrangements and coordinate the shipment of their robot and tools. During competitions, we transport robots, help translate, and provide batteries and other necessary items. Pair of Dice has one of two full fields in southern Nevada which allows us to host multiple local teams, every year, in our shop as they build their robot. This allows us to make partnerships and provide them with more support throughout the season.

Payout The greatest things in life happen when you decide to take a chance, but taking chances isn't about luck; it's about creating your own opportunities. From the rapid growth of our advanced manufacturing program to the student's inspiration drawn from JUMP START STEM, Pair of Dice has empowered a generation to not be afraid to roll the dice, and because of those chances, our lives are forever impacted. ;

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