

## Chairman's Award - Team 3374

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2020 - Team 3374

### Team Number

3374

### Team Name, Corporate/University Sponsors

Teton County School District/GH2O Machining/Jackson Hole Booktrader/Blair Place Apartments LLC/Ellen Temple /Epsilon Technology/Jorgensen Engineering/Bison Lumber/Teton Toys&Jackson Hole High School

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

Reintroducing freshman to the FRC team in 2019 expanded the overall scope of the team by having a stronger crew. In the past five years, FIRST's long term impact has influenced RoboBronc members, the majority are pursuing STEM related degrees and careers. The RoboBroncs have added six new mentors, three of which are alum. RoboBroncs initially introduced FIRST to the Wyoming Indian High School, which now has four current FTC teams.

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

The JH RoboBroncs is the largest program in Teton County with over 300 students K-12 participating. In 2019 our team started an FTC team on the reservation, called Electric Feather, that we continue to mentor. Through Electric Feather's success, three more FTC teams at Wyoming Indian High School have been created. Whether it be mentoring, hosting, or starting teams, our team believes in the power of FIRST and continues to spread its message.

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

Through our work with the school district, our team has been able to effectively impact the 3rd grade by incorporating FIRST into the science curriculum. This is the first time a club has crossed over into the curriculum creating a sustainable and scalable future for FIRST. By going outside of our community we have continued to mentor the new FTC teams in the Wind River Reservation and provide them with applied learning in STEM fields. The opportunity this offers was lacking on the reservation.

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

Our team continues to act as role models through peer to peer mentorship. New to this year, 7th graders are allowed to join FTC, and starting last year freshman were allowed to join FRC. This restructuring has improved collaboration, camaraderie and strengthened our teams. Our team also acts as role models and inspires the Wind River community by exposing them to concepts of what engineering is with hands-on learning opportunities.

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

Team 3374 is one of three FRC teams in Wyoming. Our initial goal was to create another FRC team to compete in the 2020 FIRST season. We had our sights on creating an FRC team on the Wind River Reservation, however due to their unique community on the reservation our expectations couldn't be met. We realized that we needed to shift our attention due to the lack of mentors, participation, and funding. Our short term solution will be to add a resource page on our website "A Rural FIRST guide".

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

Team 3374 has increased the number of students in FIRST in the district by adding FLL Jr. to the elementary curriculum; exposing over 200 students to STEM. FLL Jr. participation increased 37% due to our efforts. Our team assisted FLL Jr. teams and hosted scrimmages for teams across Wyoming to create a fun competitive environment for teams to apply their learning. Continuing our impact on the WRR, our team sent builders, business, and programming captains to provide direct mentorship.

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

RoboBroncs continues to host and referee Wyoming FLL and FTC scrimmages. Our team has assisted the FTC teams on the Wind River Reservation by providing business, programming and building resources. We supported the Wind River teams by inviting them to our FTC kick-off to further show them how to engage with FIRST. More recently, our team volunteered at the Wind River team's first hosted scrimmage by refereeing matches.

**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)**

Our team has continued its work with the Wind River Reservation by visiting, mentoring, and inviting them for our FTC scrimmages we host. We also mentor 15 of our local FLL teams. In 2019, we hosted FLL scrimmages, where 30 teams competed. Our team also wants to connect with the team's female population. We have continued our WOW chapter, hosting meetings where 6-12th grade girls familiarize themselves with the lab and hear from STEM guest speakers.

**Describe your Corporate/University Sponsors**

Jackson Hole RoboBroncs # 3374; Jackson Hole High School & Teton County School District, Epsilon Technology, Square One, Jorgenson Engineering, DRN (Digital Recognition Network), Blair Place Apartments, 4 Lazy F Ranch, Bison Lumber, Jorgensen Engineering, Square One Robotics, Jackson Hole Express Lube, Jackson Bronc Backers, GH20 Machining, Teton Toys, Jackson Hole Book Trader.

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

Six of our mentors, employed by our sponsors, have donated over 2600 hours of mentorship; four mentors of which have been part of our RoboBronc's family for more than five seasons. The ability to work with such a dynamic group of individuals and sponsors makes it possible to guide our team in realizing their full potential. Recognizing the importance of donors we hold a donor night to thank our sponsors and showcase our FIRST programs.

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

FIRST is a STEM and business related international non-profit that allows kids K-12 to learn about programming, business, and more, through the building of robotics. However, FIRST does more than just that. It is the idea that anyone can become who they want to be. FIRST is the symbol of knowledge, dedication, and potential. FIRST is not just about kids making robots, they are an organization that uses robots the future leaders and pioneers in STEM of this generation.

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

It's been a long road of ups and downs for our team. We understand how hard it can be to create a team that can compete on an international level when being so rural. We went from wanting to quit FRC because it felt overwhelming, to 300 kids participating in various FIRST programs. We are a proud team who wishes to help others that have challenges, like being rural or disadvantaged, to create a difference. Our experience continues to liken ourselves to a tree analogy.

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

Created in 2009, RoboBroncs Team 3374 has officially been established for over a decade. Our small seedling continues to grow exponentially. At inception no one would have ever believed we could make a change, not only in our community, but on the Wind River Reservation as well. In a divided world, Team 3374 is inclusive to all and there have been so many different individuals who have found their careers through building robots and FIRST.

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

America Martinez

## Essay

In 2009 a student from Georgia had mentioned to our present coach about a robotics program that was engaging and life changing for kids. Upon learning more about the FIRST Robotics organization, our Coach Gary Duquette, along with former STEM Curriculum Coordinator Kathy Milburn, effectively started robotics in Jackson Hole creating the only FRC team in our community. Since Teton County is located near two National Parks, outdoor sports are an obvious focus. Our community lacked an academic niche, where driven students could have an outlet. This academic gap in Jackson was filled in 2009 by the RoboBroncs, now a fully grown K-12 program.

Although our team is thriving, it has been a decade long of growth and learning to become a prosperous ecosystem. After being established in 2009, the RoboBroncs team achieved early successes. Within the first four years of the program running, the team went to Internationals twice due to winning the Engineering Inspiration (2011) and the Chairman's Award (2013). The mentors and students were also recognized through the Dean's List Finalist Award (2011, 2013) and the Woodie Flowers Award (2011). Due to the continuous success of our team it was difficult to recognize that our team lacked a solid foundation to be able to continue being successful. After our Business Mentor Mrs. Milburn left our team at the beginning of 2014, the business team struggled because she was the sun who kept our fundraising and community outreach growing. Between 2014 and 2015 our team struggled. We had to learn how to grow on our own with fundraising, recruiting and retaining members and mentors. In our worst drought, our coaches even considered discontinuing FRC and solely focusing on the new blossoming FTC program. Yet, our coaches realized that with strategic planning and investing time, the FRC team could be transformed into a successful team again; this time focusing on building a solid root system. Through a series of changes, initiatives, and projects, a new four year journey began where our team made it its goal to be a blossoming tree whose growth would create and inspire other FIRST seedlings.

### Roots. Season 2016-2017

In order to establish our root system, our team looked towards other successful FIRST teams. While visiting Team 1619, Up-A-Creek Robotics, in Colorado, a paradigm shift occurred within our team. We learned how to use our weaknesses as strengths. For example, the team realized the need to focus on smaller achievable goals. Our team also learned how mentors were a missing key component of our root system. Mentors are the gardeners that uphold and support student's ideas, goals, and aspirations. Our team learned by bringing in a dedicated variety of experts we could help grow each branch of the team through professionals with different skill sets. While getting more mentors involved was crucial, funding was also becoming a serious obstacle that threatened our team's future. Getting a detailed financial plan was an essential part of the root system that our team lacked. We found that through a stronger relationship within the community, getting involved attracted more donors. The strength we gained from this season was our ability to identify our weakness and brainstorm collectively for solutions.

### Trunk. Season 2017-2018

In our second year of growth we focused on fundraising and outreach. Our team created a three-year budget to manage funds more efficiently. Within the budget we established priorities for each of our FIRST programs. We included entry fees, materials, travel, and staff costs. This allowed us to have more sustainability for the long term. To address outreach our team started close to the trunk by creating a parent group. Their main focus included food, grant writing, and business expertise. Inspired by robotics Team 3132, Thunder Down Under's work with the Navajo Nation, we reached out to the Eastern Shoshone and Northern Arapaho tribes in the Wind River Reservation. Our team shared the FIRST message by exposing them to the opportunities FIRST offers.

### Branches. Season 2018-2019

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In the third year our team focused on the growth of membership, creating a stronger female population, partnerships, and continued outreach. While evaluating our membership, we voted to restructure our FRC team by allowing freshmen to join. Reinstating freshman in FRC diversified our team and fostered a greater atmosphere of ingenuity and camaraderie. It also gave an opportunity for current members to mentor the freshmen, allowing them to gain knowledge and make our team more consistent in skills. Another factor of our team's growth strategy was the RoboBroncs pilot chapter of Women of the World (WOW). WOW is a program developed by Team 2485, The W.A.R Lords, who recognized the lack of females in both the STEM and FIRST world. Our WOW chapter allowed us to strategically target girls who would benefit from FIRST. Launching the RoboBroncs WOW chapter in 2019, brought great results. Our team hosted various meetings where 6-12 grade girls were exposed to strong female leaders in the STEM world and began to practice lab skills taught by the RoboBroncs members and mentors. While Team 2485's WOW chapter was intended for high school girls, our team was aware that retainment of girls as they transitioned into high school was our main challenge. Another branch of our success was partnering within our school district. Kathy Milburn, mentor for the RoboBroncs, has overseen the implementation of FLL Jr. into the third grade curriculum. Having robotics in the 3rd grade meant that over 200 new students joined the RoboBroncs family as mini-engineers in the making. Nurturing last year's relationship with Wind River our team started an all-girls FTC team at the Wyoming Indian High School called Electric Feather. The girls of the Electric Feather team would eventually go on to compete at the FTC Wyoming Championships. Our influence solidified an Electric Feather team member to apply and be admitted to the School of Engineering at the University of Wyoming. The significance of her accomplishment is due to her high school's graduation rate of 50%. Having been part of her success is what drove us to set goals to continue growing robotics at the reservation in the future.

**Forest. Season 2019-2020**

In the past four years we have established our root system, cultivated our trunk, spread our branches, and now this year we celebrate our forest. Our team continues to focus on membership, mentors, and outreach. FRC team participation increased by 30%, going from 21 to 34 members. Our team retained over 93% of FTC members while moving up to FRC, making 2020 the year with the highest amount of RoboBronc members ever! This significant growth of members required more mentors. This year we added six new mentors (one at the FLL level and the remaining five in our FRC program); half of which are RoboBroncs alum. Our team acknowledges the value of strong feeder programs. By expanding FTC grade requirements from just 8th and 9th grade to include 7th graders, this year more students are likely to continue to participate in FRC. Although managing a high amount of members has been slightly challenging, it has allowed our team to become more involved in outreach programs. This fall, our team hosted two FLL Rodeo Scrimmages, one for 4th and 5th grade, and the other for 7th and 8th graders. Our team also hosted a local FTC Scrimmage. Beyond outreach for students, we also held a Fall Donor Showcase and bi-monthly Open House celebrating all of the RoboBroncs accomplishments. Both of these events celebrated RoboBroncs supporters. People were encouraged to look behind-the-scenes to see the inner-workings of our programs. Branching outside the community, we invited the FTC Wind River teams to our first ever FTC kick-off. This year, three more FTC teams have been formed at Wind River. Originally, it had been our goal to create an FLL club at the reservation this year and more FTC teams, but our team realized from our past experience, the importance of not rushing growth, especially when no roots have been formed. Dedicated to further our outreach, we have designated February as "FIRST February". To honor our special relationship with the reservation, we kicked off FIRST February by going to the Wind River Reservation to volunteer at their first ever hosted FTC scrimmage. Through this outreach our tree will continue to RISE. Our next FIRST February outreach will take us to present at two elementary schools, a middle school, and a preschool.

In the past four years of growth, we have learned how to be a successful rural FIRST team and wish to continue to help others achieve the same. As we look ahead, our team would like to focus on helping other rural FIRST teams with challenges like mentors, fundraising, and outreach by creating "A Rural FIRST" guide.