



## The Highlanders Chairman's Essay 2016

We are The Highlanders: a team of innovative engineers, future professionals, and driven leaders. Our ideas are unstoppable, our passions are exceptional, and our dedication is unique. These characteristics are founded on four simple pillars: our mission, our community, our past, and our future. Our tenets always keep our passions strong, our minds engaged, and our futures bright. Any challenge before us is something we can overcome.

### **Our Mission:**

Our mission is simple. It encapsulates our community locally and nationally as we revel in our past endeavors and envision future ventures. We aim to provide all students, elementary through high school, with hands-on experience in science, technology, engineering, and mathematics. We do this to provide them with real life business interactions with firms in the community; and to practice gracious professionalism, teamwork, and innovation. We know our mission, and we know how to accomplish it. To do this, we created a 501(c)3 non-profit company, Neaera Robotics, as a FIRST think tank in Northern Colorado without the borders of a school holding us back. Neaera Robotics is the launch pad for all our great stories.

With our mission in mind, we center our aspirations around five simple steps to help us reach our goals. Each step is building upon our mission. We raise awareness, start early, encourage midway, join community, and finally partner with professionals.

We understand that our mission must have a firm foundation. This foundation is grounded in raising awareness. The Highlanders have experienced first-hand the impact of FIRST and know the power behind engineering and technology. Students are taught the numbers and facts behind science and math, but FIRST offers a whole new application that kids in our generation often miss: a hands-on experience of engineering. FIRST is a catalyst for our team's efforts to raise awareness of STEM.

We used this year's 4th of July parade to start a new chapter of spreading FIRST. Spectator's eyes would flash with excitement as our robot launched the 2015 exercise ball into the air. We also started writing a children's book that promotes FIRST through the intriguing story of a young robot. We reached out to other organizations such as Boy Scouts and Girl Scouts with presentations and demos of our past robots. Delving into our imaginations, the team produced a Halloween spider bot that drove around on Halloween passing out candy to neighborhood kids. We are always finding new and innovative ways to spread the word of FIRST.

With our mission foundation grounded we move into the next step: starting early. We work with children's groups to expose them to the specifics of FIRST and STEM. We impart an experience for these kids that will inspire their minds and imaginations.

We all have an inner passion, a spark waiting to be ignited. FIRST provides the tinder to discover and grow this passion. The Highlanders have experienced the power of FIRST, and want to relay this to younger generations. We now officially have 13 FLL teams under our non-profit umbrella. The past couple of years we have participated in the FLL rookie booster in Denver teaching breakout seasons such as programming and basics of building. Expanding our outreach, we successfully hosted The Highlanders' 2nd RoboCamp this summer. The program

brings in local 3rd to 5th graders and teaches them about STEM and FIRST values, with the intent that they join a FIRST in the fall. One of our biggest perennial efforts to integrate FIRST and the community is the Liberty Regional and the Weld Regional FLL Qualifying tournaments that we run. As recognition of our support, our whole team was honored with the “Volunteer Award” at the Liberty Qualifier.

While our hearts were set on the younger minds, we knew FIRST called us even farther. The past two years we have put more attention into the impoverished, underprivileged, and minority groups. We started multiple teams at different Boys and Girls clubs in Fort Collins, Loveland, and Wellington. Working with the kids was an eye-opening experience for all of the team members involved. Who knows, we might see some of these boys and girls, who didn't even know what engineering was, become future engineers. For many years we have volunteered to teach students how to code at Truscott Elementary, a title one school. We hope this new knowledge and skill may transfer into a passion to join a robotics team.

The excitement we spark in the hearts of kids jumping into FLL can just as easily be extinguished. The transition from FLL to FTC is hard; kids sometimes lose interest. We've worked within our community to smooth out the path for FTC teams.

We've opened our shop facilities to a variety of robotics teams. We taught a local FTC team how to fabricate basic parts, which allowed them to construct their practice field. FTC teams across our community have used our unique 3D printing and machining capabilities. We have even took FTC abroad as we assisted a German FTC with their infrastructure and engineering notebook.

Not too long ago we too made a bolder transition: going from FTC to joining a community much larger than ourselves. FRC isn't just a competitive challenge, but a family in which all the teams work together to better each and every individual. The fourth step in our mission is to enlarge this global community, give back to it, and grow together. In our rookie year, we joined with another FRC team to mutually assist each other. In consecutive years, we partnered with an old friend to further the mission of FIRST. Starting in South Dakota, and following into Wyoming, we helped start two new FRC teams. Last year we took an all-girls FRC team under our wing as we mentored them through a challenging rookie year. We even shared our bus to the World Festival to save money for both teams. Our newest and innovative way to assist our broader community manifested itself in a Carbon Fiber Night. At this event we welcomed ambitious teams in our community to learn valuable skills about making carbon fiber.

Our journey through life doesn't end with FIRST. We believe FIRST is just a launching pad towards a greater community: the professional world. We connect with businesses in an effort to collaborate with business professionals. We learn from our partners, increasing our own knowledge and our understanding of the real world. Many of our corporate sponsors invest their time to mentor us. Fleetwood and PTC have both aided in our learning process, and they are crucial pages in our story. Our partnerships with our sponsors are only the beginning of our exploration of the professional community. FIRST has given us lifelong skills that we are able to relay into internships and job opportunities. One member took his FIRST knowledge to create his own company that writes gaming apps for phones. Eight FIRST members secured internships last year with businesses in Fort Collins.

### **Our Community:**

While our vision centers around FIRST, the Highlanders' outreach isn't limited here. We are passionate about improving the communities we've grown up in. Our community stands as a pillar on its own. Last year we helped pack food bags for less fortunate kids for the McKinney Backpack foundation. In addition, we collected and delivered food to bring the community together after torrential rain and a devastating flooding caused unprecedented damage in many cities in Northern Colorado. Our team volunteers at an annual children's triathlon. We love

cheering the kids on and seeing their exhausted but ecstatic faces as they cross the finish line where they are greeted with a HUGE robot that they get to control! The Highlanders have even earned a reputation in our educational circles. Liberty Common High School, rated as Colorado's #1 high school, came to us for assistance and fabrication help for their 2016 senior project. Our members, despite the intensity of build season, took time to offer advice and input. The passion for giving back to our community is now a part of each and every Highlander.

### **Our Past:**

This past year our team experienced one of the most drastic challenges since our inception. Over half of the team graduated from high school in 2015 leaving only eight returning members. We assembled a brand new team using recruitment nights, school demos and presentations. We now accept middle schoolers, and our female members went up 300 percent. The veterans revamped the learning process by creating how-to's for all machines and hosting training nights. This roll-over of old members into new recruits allowed our cycle of success to come round full circle for the first time. Approximately 73 percent of our alumni came back to assist FIRST teams, and 50 percent have become registered mentors. The most unique part of the whole process is that two of our new members came from teams under our non-profit umbrella, and others have come from the teams we have assisted over the past.

### **Our Future:**

While our past defines us, our future potential guides how we act and serve now. With our Cycle of Success coming full circle this year, and a mission solidifying us to keep moving forward, our gears are set to reach unparalleled success. As each year passes we know the importance of grounding our outreach in a vision that encompasses expanding far outside our local community, reaching further into the lives of youth, and creating opportunity for all. Each year builds upon what we've done, but it is our future ambitions that motivate us. To us, FIRST is much more than robotics competitions. It's the program that gives us the chance to be who we want to be. Our inclination to serve our community has fundamentally developed us. Transferring our knowledge has created a foundation for the next generation. The Highlanders' progress isn't something we measure in awards or trophies. It's something we measure in our members, our community, and our stories.