



The Highlanders Chairman's Executive Summaries

Describe the impact of the FIRST 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 FIRST programs as mentors/sponsors.(500 char)

4499 students embark on a journey pursuing their STEM curiosity through hands on learning and our teams' Cycle of Success initiative (COS). COS is a peer-to-peer learning system where senior students and alumni work to teach younger students. 100% of team members graduated high school; 89% attend college in STEM degrees, 70% of alumni return to assist the team. 10 students have progressed through the STEM-focused internship offered by Neaera Consulting in the last 3 years.

Describe your community along with how your team addresses its unique opportunities and circumstances.

4499 is part of a variety of communities like the Front Range, COFIRST and our STEM partnerships. Along the Front Range, we stretch our pathway from 70 miles away, where two members attend meetings onsite and virtually. 4499 is part of supporting COFIRST by running and assisting FIRST events, part of event planning committees and managing COFRC Discord. Team 4499's shop is home to students from 5 schools, 11 members and 4 cities and shared with 150 people from 11 teams in the last 3 years.

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?

Our passion for FIRST has been shared with over 54k people in total by starting FLL qualifiers in the 2nd largest district in CO, running the Liberty FLL qualifier for a decade, making robot Halloween costumes and speaking at a nationwide conference. Our FIRST Core Value inspired *Rocky the Robot* children's book series is available on Amazon in both English and Spanish. On YouTube, we have our Rocky read alongs and how-tos for our STEM kits shared with virtual educational community.


Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.

Kindness, integrity, and passion; 4499 members carve these qualities into everything we do. At competitions, 4499 passes out rookie survival kits to fill in missing supplies and hand out Safety Kits to remind everyone, "Safety 1st". Team members also help teams in need; when 4388's robot needed a place to stay when their school shut down we allocated space for 6 months and when FTC #17969 needed a special part we designed, printed and shipped it out in time for their competition.

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

4499 reaches out to the FIRST community through training sessions, donations, webinars and design assistance. 4499 started Shop-Talk, a platform for students to discuss FRC related topics every week, Drop-In-Shop days and made recourses and assistance to over 8 teams. In the past 3 years, 4499 assisted 13 FRC teams, 4 FTC teams; mentored 2 FTC teams, 3 FLLC and 10 FLLE teams and started 5 FLLE teams. 4499 has assisted in FLLE and FLLC programs with virtual tournament ceremonies.

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?

4499 is a safe haven among students on the STEM path. When FTC 18137 lost their robot to a fire days before their tournament 4499 invited them to our shop for a redesign and to rebuild part of their robot. Outside of FIRST we also engage young innovators by starting KILTS club, partnering with Lakewood High School to share the KILTS program with nearby schools. 4499 assisted in 6 virtual tournaments, making 3 informational videos, custom FIRST backgrounds and hosted training on Premiere Pro. 


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

In collaboration with Neaera Consulting and USDOT, 4499 students constructed VRUM(Vulnerable Road User Mission), an app that increased the safety of pedestrians by notifying vehicles nearby of their location. This summer, 8 students will be part of an internship lead by 4 alumni, to create an autonomous robot that notifies traffic of a vehicle incident. This \$150K project will be through a partnership with Virginia Tech Transportation Institute and USDOT.

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

4499's diversity plan focuses on building a strong team, encouraging students find their potential and having a respectful environment. 4499 is a free program open to any student from any school, city or skill. 4499 is home to a mixed student group: 82% minority, 17% women, 62% underclassmen. The team consists of students from 5 different schools in 4 different cities. 4499 provides hands on experience to students whose schools may not provide the opportunities or individual training.

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

In 2021, 4499 joined the Compass Alliance to spread assistance globally. 4499 has secured their future through fundraising, grants, Cycle of Success and TARTAN Leadership initiatives. 4499 students and mentors follow this to teach needed skills like communication, leadership and efficiency. To ensure future growth and success, 57% of leadership positions are held by underclassmen. 4499 prides itself on being a small team, where students become multifaceted innovators. 

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

4499 hosts open team dinners, shop tours and daily team activates to visitors. 4499's main sponsor, Neaera, has developed an internship program that partners with the team's students to work on cloud storage and autonomous vehicle projects. In the past 3 years, 5 students have earned Neaera \$150K in profit with these projects. This money is then donated back to the team, completing the COS. This partnership has financially secured our teams need for parts, supplies and expenses.

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

In 2021, the team had 5 seniors graduate. 4499 built the team from 6 kids to 11, many of who are new to FIRST. But our team is still small. To spread our program, 4499 created videos for prospective students and a virtual shop tour that is shared on YouTube. As a small team, students have the ability to have one-on-one mentorship, enabling them to be experts in programming, project management, manufacturing and videography. After all, our team saying is: "We may be small, but we are mighty!"

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

4499 supplies students with the opportunity to learn leadership, communication, and innovation skills that will be used in future professions by running the team with a business-like structure. This promotes the use of management software like Jira and Slack, adapting to onsite and virtual members and encouraging cutting edge software development. Results of our efforts are shown through our current and past students' achievements who hold certifications in Solid Works, AWS and Microsoft.

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

The Highlanders team motto "It's not about the game it's about the journey" sums up our teams path over the years. Through hands on experience our 11 students travel the trail of learning – failing often – but always emerging stronger from it. With the Highlanders, students get to travel this path together, finding lifelong friends and talented coworkers along the way. Highlanders paths are linked with their community, FIRST and STEM for life.