

Members of the 2022 Cougars Gone Wired (CGW) FIRST Robotics Team 2996 at Coronado High School live by three words: “Build, break, innovate.” Students of all abilities gain professional skills and share a passion for FIRST, inspiring others to dream about a future in STEM. Along the way, we never forget to have fun.

Building an Inspired FIRST Team

Our student-run team is empowered by mentors who offer advice but require students to find their own answers. We are led by a student CEO supported by 11 student VPs, five oversee business functions and six manage technical areas. VPs teach their sub-team, maintain their schedule, and report back to the team as a whole on their progress. Annually, team veterans apply for these leadership positions by submitting a cover letter and resume, leading to an interview by mentors.

This year we have 37 members, eight women and 29 men from schools across the Pikes Peak region. Each student joins a business and a technical sub-team. Anyone may join the team regardless of background, experience, or abilities. Our team prioritizes finding a place for everyone to thrive and use their talents. We have a long history of accommodating students with varying needs.

While the technical sub-teams focus on various aspects of the robot, our business sub-teams are also essential to our structure. For example, the media sub-team keeps parents and sponsors informed of our events through our social media and website. From robot construction to website management and T-shirt design, students run every aspect of the team.

Everyone contributes to decisions in an inclusive and supportive process, ensuring that each person has a voice. We learn to work out issues by voting on the annual team motto and yearly objectives. A mock game during pre-season introduces strategy and the robot-building process while experienced members bond with and guide newcomers.

Our activities create a close-knit community, where teammates become friends, foster communication, and develop camaraderie. We start with a pre-season barbecue where rookies meet returning members and their families. The team gathers outside of meetings for events like pie night at Village Inn and our pre-kickoff cake party. Our team works hard, but we play hard, too.

We are known for close team bonds and unmatched spirit. For example, at regionals, members pour from the stands to perform our team dance and cheer enthusiastically on the floor, inviting others to join us. Wherever we go, people comment on our passion and how welcoming we are.

Preparing Students for the Future

Most of our members start with no technical experience but, because students do the work, they gain proficiency in multiple skills, such as CAD, programming, construction, CNC, and manufacturing. Our team-building process teaches brainstorming, coopertition, leadership, and gracious professionalism, preparing us to be capable professionals in the future. Our

graduates have completed STEM degrees at Massachusetts Institute of Technology, Stanford, Notre Dame, Worcester Polytechnic Institute, Rensselaer, and Colorado School of Mines.

FIRST as a Family Affair

Parents organize Cougar Kibble, bringing in homemade meals so the team can eat together as a family, solidifying the community culture we pride ourselves in. Volunteer parents drive our students to regional competitions, giving CGW an exceptional cheering section. Some of our mentors are parents, often continuing with the team years after their children graduate. Members and their families create lifelong friendships through the team.

Staying Resilient During COVID

During the quarantine, our team found ways to maintain contact despite being deprived of school-based communications. We met through the Discord app and used other online software to train members and bond as a team. Using these resources, we were able to take part in the FIRST At Home Challenges.

When COVID shut down schools, many of the younger FIRST teams disbanded so our usual opportunities for FIRST outreach were no longer available. The needs in our region weren't STEM-related, but as businesses shuttered and unemployment spiked, CGW helped the community weather the crisis. We provided dinners for families with Early Connections, a low-income child care center. Members painted five buildings for the Salvation Army, which runs a Colorado Springs homeless shelter, and spent hours sorting food donations for Care and Share, which distributed 25 million pounds of food last year. As children returned to school, CGW loaded backpacks with supplies for Backpack Bash, a regional event coordinated by several charities. Approximately 15,000 backpacks were handed out this year.

Creating the Habit of Outreach in STEM

CGW takes every opportunity to inspire and encourage children. We partner in community events, including the annual Cool Science Carnival at the University of Colorado at Colorado Springs, which exposes children to STEM topics. We have been involved with this event since 2010 and, this year, there were approximately 6,000 attendees. Our team brings a small arena to the festival, allowing kids to compete with each other using VEX robots, a highlight of the event that offers a memorable, hands-on experience. We also present our most recent robot, showing students what they can accomplish in high school.

At our annual summer MAD (Making A Difference) Camp, the team brings together middle-schoolers from across the region. Nearly two dozen youths meet the team's robots and are introduced to STEM concepts, leadership, and teamwork at the weeklong event, which is developed and taught by CGW members. Campers learn by doing, creating VEX robots for the competition that concludes a memorable week. Sixteen attendees from MAD Camp's first four years have returned to join the CGW team. After a two-year hiatus caused by the pandemic, we are enthusiastically planning for its return this summer.

CGW delivers STEM in the classroom by bringing robots to elementary and middle schools. We also reach children through Trunk or Treat events where they meet our robots and interact with CGW members. This year, we also set up and ran carnival games for about 300 students at Jackson Elementary's Trunk or Treat. Team members greet newcomers at Coronado's 8th-grade Open House, exhibiting our most recent robot and sharing information about FIRST robotics and our program.

Helping FIRST Grow in Colorado

Since 2012, our Special Projects sub-team has built a competition-scale field for our annual end-of-build-season scrimmage. As many as 21 other teams participate in this full day of competition. Invitations are extended to all teams in the region, as we are the only FIRST group that builds a full field. Scrimmage provides an opportunity for teams to experience the game and develop strategy before going to a regional.

Apart from scrimmage, CGW's field is used on the weekends before regionals, when we allow other groups to test their robots. We have transported and managed our field at the Denver Regional since 2014 and, recently, at the annual Kendrick Castillo Tournament held at Denver's Energy Day.

Because teams often ask how we structure and run CGW, we began a Business Exchange at the Denver Regional, allowing competitors to ask questions and share ideas about the business aspects of teams. This is the fifth year we have hosted this event, with great success.

Our team loves to share knowledge with others, through the season and at competitions. Recently, we discussed our structure and meeting organization with FRC Team 2358, Bearbotics. FTC Team 16253, Beastbotics, has also observed CGW meetings and approached our team for technical help. We taught their coach how to use our CNC machines and he created several parts for his team. During the Energy Day competition, we provided technical assistance for several teams including the Hi Fives, the Highlanders, and Up-A-Creek.

Developing Sponsor Relationships

CGW's biggest challenge remains recruiting and retaining sponsors. The COVID-driven downturn has constrained Colorado Springs businesses, complicating efforts to recruit new supporters and maintain existing benefactors. This year, we've revamped our contact with sponsors through emails, phone calls, and presentations.

We have been fortunate with the variety of support we have received from our sponsors. The National Association of Women In Construction, (NAWIC), holds one of its chapter meetings in our facilities during build season, allowing us to demonstrate how our team operates. Elks Lodge BPO 309 hosts our annual fundraising dinner in their facilities and provides financial support. In return, CGW members help maintain the lodge's landscaping with an annual cleanup and assist with setup for other fundraisers. This long-term relationship has built multi-generational bonds of friendship and support.

In-kind support is a key contribution to our team's success. For example, Vertec cuts, forms, and powder coats the metal framework of our robot, using the team's CAD files. Vertec also hosts team members for an annual facility tour. Colorado Springs moving company Two Men and a Truck supports the team by delivering our practice field to the Colorado FRC Regional competition. Local retailer Leechpit produces team-designed stickers and pins for CGW members and supporters.

Advancing FIRST Core Values

The goal of CGW is to uphold the values of FIRST in a manner that remains with our members long after graduation and is sustained at Coronado for generations. Cougars Gone Wired has become an exemplary, student-led FIRST robotics team by reaching goals and creating new ones, constantly striving for more. Our cohesive family environment encourages individuals and strengthens our team. As challenges arise, we find new ways to support our community and share our passion for FIRST and STEM. Our year-round outreach program proves that FIRST is more than just robots.