

# BUSINESS PLAN 2016

By Daniel Bazan & Casi King



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# Executive Summary

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## Team Mission Statement

FIRST Team 2996 Cougars Gone Wired strives to combine a constant pursuit of knowledge with a commitment to the community and the expansion of FIRST. We strive to be a role model for other teams by focusing on building students while building robots, having fun while working hard, and doing our best while helping others.

## Team Origin

In August of 2008, Mr. Bryce McLean, mathematics and engineering teacher at Coronado High School (CHS), nine mentors, and thirty-four Colorado Springs School District 11 (CSSD11) students, established FIRST Robotics Team 2996, Cougars Gone Wired. The Technology Building at Coronado High School serves as home and base for the growth and development of the team. Cougars Gone Wired has since expanded throughout the Pikes Peak Region, recruiting thirty-nine dedicated students for the 2016 season.

In past years, Team 2996 has had to overcome many obstacles. During the team's second season, in 2009, the head coach and mentor Mr. Bryce McLean underwent major heart surgery, and as a result he was absent for the critical months prior to build season. In the summer of 2012 the Waldo Canyon Fire, one of the most devastating fires in Colorado history, affected many team members' homes putting Coronado High School at risk. In the August of 2014, one of the beloved founding mentors, Dr. John Wood, and his wife were lost in a tragic plane crash. This was very hard for the older members who had formed very close relationships with him. At the same time, Mr. McLean was offered a promotion at Jenkins Middle School as Vice Principal, and as a result had to step down as head-coach. To overcome these losses both student leadership and mentors had to take on new responsibilities in order to help the new head coach Mr. Gary Hilty. Mr. McLean's passion for teaching, and his continued support for the team, returned him to CHS as a teacher and head coach for the 2016 season.

## Organizational Structure

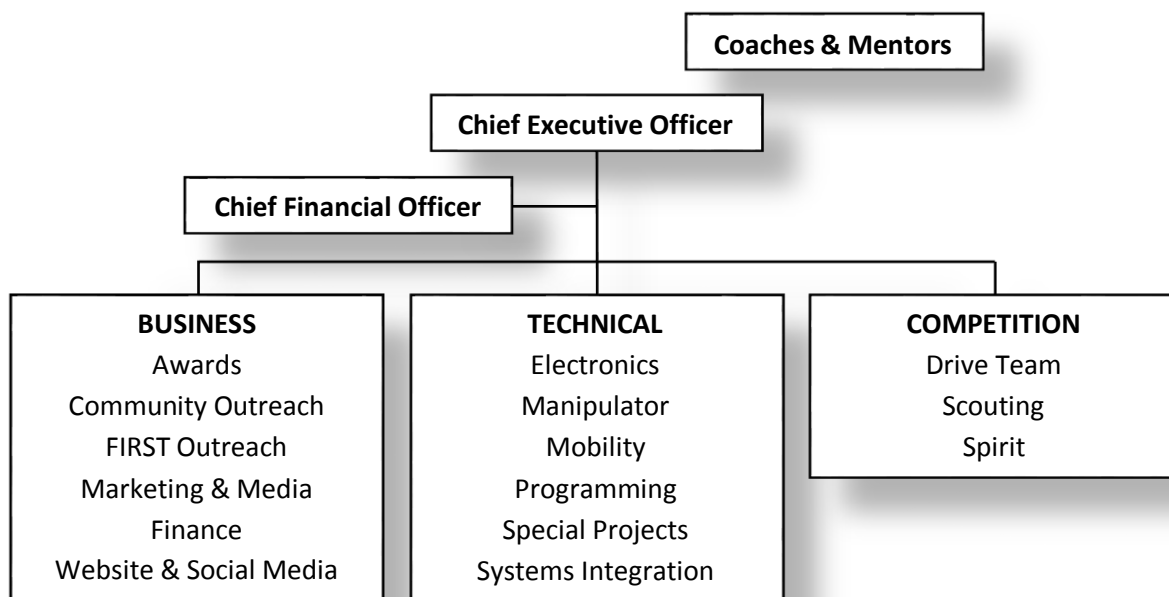
The majority of the team's revenue comes from STEM-related corporate sponsors. The team raises money through collaborative fundraisers, including FIRST Green E-Watt Saver LED Light Bulbs. During the 2016 build season, Cougars Gone Wired continued selling Old Chicago Pizza Palz cards.

CSSD11 manages team expenditures. They ensure that funds are properly spent by requiring itemized and specific financial records. Coaches justify expenses to the district with input from student leaders and mentors.

The team connects with potential sponsors through mentors, parents, and community events. Leadership coordinates an interview process to determine presentation team membership. This group of students then presents to potential sponsors to detail the team's successes, to explain FIRST's mission, and to seek financial support.

Mentors are often acquired through these presentations. As noted in the "Relationships" section, the majority of student recruitment occurs at Coronado registration, community events, and the annual barbecue.

The FIRST experience inspires learning and growth as a team and as a business; encouragement of student enthusiasm for STEM remains the highest priority. The team maintains a "student-led" and "mentor-guided" operation. The "hands-off" mentor policy encourages student STEM growth. To ensure an even distribution of tasks and to create an environment for personal growth and well-rounded members, the team requires both business and technical sub-team participation.



## Relationships

Off-season is dedicated to student-organized community activities: demonstrations with the public library system, science festivals, charity walks, and Elks Lodge community dinners. The team has also gotten involved in wildfire damage mitigation and reparation.

CGW recruitment takes place at community events, the CHS registration, as well as the yearly barbeque. During off-season, meetings focus on team building, train incoming members in their given sub-teams, and afterwards, members go to Pie Rush Wednesday at Village Inn for further bonding and free pie. The team feels strongly about keeping in touch with alumni. To do this, every year the team has a cake party, an event in which the whole team, old and new, gathers to bake and decorate a cake that is eaten at Kickoff.

The team's supportive and dedicated mentors are comprised of alumni, parents, and various engineer volunteers. They share their knowledge and experience, all while being as "hands-off" as possible so that the students can create their own experiences.

To interact with other FRC teams, Team 2996 hosts the Pre-Ship Scrimmage, an event in which teams from all over the state are invited to play the FIRST game in a competition-like environment. CGW takes the field that is built and sets it every Saturday for any teams to practice on. The team also invites others to observe our mock game, a three day activity in November that shows new members what Build Season will resemble.

Sponsors allow CGW to experience FIRST in return for being invited to events, and featured on team shirts as well as the robot.



## Deployment of Resources

The team's connections have multiplied over its eight years, enabling the acquisition of resources and expansion of impact. The most valuable resource is the membership of 39 students and 18 mentors which is dedicated to giving demos, mentoring younger students, and volunteering. Participation in Coronado High School events and work with national service programs attracts new audiences. At demos and festivals, the team encourages kids to drive the robots and engages in conversations with children, parents, and professionals to educate and attract them to the FIRST community.

Cougars Gone Wired started the first 5 Jr. FLL teams in southern Colorado, and has expanded to 12 teams across 4 elementary schools. To each team a 2996 member offers technical support and advice on program sustainability. Cougars Gone Wired donates resources to start these teams, and volunteers time to run the annual Southern Colorado Jr. FLL Showcase. In 2010, FTC Team 3635 was welcomed into the Cougars Gone Wired family. Since then, the team has mentored an FTC team, and hosted a 2014 FTC Qualifier.

Team members are required to participate on business and technical sub-teams. This distribution of intellectual resources has proven to engage students, teach practical skills, and prepare for future careers. By financing trips, team shirts, shop materials and entrance fees with sponsor donations and fundraisers, members pay only a low joining fee, and substantially reduced trip prices. This enables members to attend competitions and makes FIRST an accessible opportunity for all.

## Future Plans

The finance sub team will complete fundraising and business submissions in the 2016 off-season to increase robot build involvement. General leadership aspires to implement new solutions for team communication. The team began selling “Geared for Greatness” water bottles during the 2015 build season and doubled the initial investment. It hopes to expand this line of products to increase fundraising variety and profit.

The team will finalize all plans for the middle school level robotics summer camp. Later expanding the summer camps to more levels, and have it as a sustainable source of revenue for future years. This would also allow the team to fundraise before the school year began.

The scouting team will continue with a paperless system to optimize the match scouting system and make it green. Cougars Gone Wired is exploring the possibilities of sponsorships with technology companies such as Google for donations of Chromebooks or tablets to help initiate this system.

Better the new-member training workshops and leadership seminars to further develop the student mentor program introduced in the 2014 off-season. Especially in the website and social media, electronics, programming, and systems integration sub-teams.

## Financial Statement

<b>Entrance Fees</b>	<b>Arizona Regional</b>	<b>\$ 4,000</b>
	Colorado Regional	\$ 5,000
	Championship (Tentative)	\$ 5,000
<b>Lodging</b>	Arizona Regional Hotel	\$ 5,300
	Colorado Regional Hotel	\$ 3,800
	Championship Hotel (Tentative)	\$ 7,500
<b>Transportation</b>	Bus for Championship (Tentative)	\$ 7,000
	Robot Materials (Prototype, Practice, Competition)	\$ 5,300
<b>Build Season</b>	Field Materials	\$ 2,000
	Miscellaneous	\$ 2,500
	FIRST Outreach	\$ 400
<b>Community Outreach</b>	Local Outreach	\$ 300
	<b>Total</b>	<b>\$ 48,100</b>

## Risk Analysis

Strengths: 18 mentors including engineers, industry professionals, business owners, and educators; definition of leadership roles; involving parents and utilizing parent skill sets; strong, positive FRC reputation; featured Coronado High School program; 39 members of gender, age, ethnic, and skill diversity; family atmosphere; facilities including wood and metal shops, community room, computer labs on integrated network, aux gym for practice field and events, catering room for Cougar Kibble

Weaknesses: Developing additional corporate sponsors; fundraising; developing future business and technical leadership; improving transition of VPs; communication for events and meetings

Opportunities: increasing interest in STEM and FIRST especially in younger generations; women in engineering resources; promoting Gracious Professionalism outside of robotics; leadership skill development; scholarships, internships, networking; new member mentoring program

Threats: Economy's effect on sponsor resources; effects of FTC team loss; coaching turnover and changes.

Risk Mitigation Plan: The above analysis mandated a collaboration of students, coaches and mentors to strategize methods for tackling program risk while growing success and maintaining strengths of leadership and diversity, including increasing the female to male ratio of students and mentors, and attracting additional mentors. This sustainability work group is responsible for planning future fund development and building relationships with community STEM partners.

# The Team

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## Team History

### 2009 – Lunacy

Given the complexity of building a robot and the team's inexperience, the robot for 2009 Lunacy was built to be what the team jokingly called "Dozer" for its ability to do little but push other robots around on the field. Cougars Gone Wired experienced little competitive success on the first day of the Colorado Regional, but was re-energized after receiving the Website and Animation awards. The team returned intent on enjoying the rest of the time at competition, as it was clear Dozer would seed high enough to join in the elimination rounds. However, thanks to the kindness of the first seeded team, FIRST Team 399, and their partner, FIRST Team 1332, Cougars Gone Wired not only participated in the elimination rounds, but was part of the winning alliance and received the Rookie All-Star Award. The team competed in the Newton Division of the Championship competition in Atlanta, Georgia.

### 2010 – Breakaway

Inspired by the previous year's success, Cougars Gone Wired went into the 2010 Breakaway season aspiring to build a robot capable of competitively playing the game. The team chose to increase their level of competition by participating in multiple regionals. The Kansas City Regional was used to make significant improvements in preparation for the Colorado Regional. In Denver, the team made it to the semi-finals, and was awarded the Entrepreneurship, Industrial Safety, and Autodesk Excellence in Design awards.

### 2011 – Logo Motion

One of the most successful seasons to date was in the 2011 game *Logo Motion*. Cougars Gone Wired won the Entrepreneurship Award for the second year in a row and made it to the semi-finals in the Kansas City Regional. The team continued to the Championship competition with the acquisition of the Colorado Regional Chairman's award. The Colorado Regional also yielded a FIRST Dean's List Finalist Award to Scott Von Thun, and the Woodie Flowers Regional Award, presented to the team's "Big Kahuna", Mr. Bryce McLean. Cougars Gone Wired made it to the seventh seed in the Curie Division at the Championship competition in St. Louis, Missouri.

### 2012 – Rebound Rumble

Going into its fourth season, Cougars Gone Wired adopted a new plan from another FRC team: two identical robots, both built within the six week build season. The first robot was "bagged and tagged" and the second stayed behind. This gave the team extra time for driver practice, testing programs, resolving robot issues, and making improvements. This led to Cougars Gone Wired victory at the Colorado Regional as head of the top seeded alliance with teams 399 and 3807. The team then proceeded to the Archimedes Division at the World Championships, at which the team's CEO, Jasmine Kemble, was chosen as a Dean's List Winner.

### 2013 – Ultimate Ascent

Cougars Gone Wired made it to the Semi-Finals at the Kansas City Regional, and received the Imagery Award. At the Colorado Regional, the team won the Regional Chairman's Award and made it to the finals and was chosen as the Colorado Wildcard. At the Championship competition, Cougars Gone Wired made it further than any other Colorado team had before: the team made it to the semifinals in the Curie Division. The team was unable to continue competing due to a Jaguar failure mid-match.

### 2014 – Aerial Assist

The team was incredibly successful last season as it was named both Regional Chairman's Award winner and Regional Winner at the Utah Regional, even though it was only intended as a practice regional. These achievements lead to a fun and enthusiastic second regional, and a Colorado Regional Spirit Award. Cougar Gone Wired was ranked eighth in the Curie division at the Championship competition, but malfunctioned during a qualification rematch and finished out the season in 24<sup>th</sup> place.

### 2015 – Recycle Rush

Due to the change in head coach and loss of a mentor, the team faced difficulty entering the 2015 season. The team persevered and ranked 4th at the Utah Regional and won the Engineering Inspiration Award, guaranteeing us a spot in championships. At the Colorado Regional the team won the Quality Award as well as ranking 12th. At championships, the team was in the Curie division once more and seeded 52<sup>nd</sup>.

## Awards History

### 2009

- Colorado Regional Website Award
- Colorado Regional Highest Rookie Seed
- Colorado Regional Rookie All-Star Award
- Colorado Regional Winners
- Colorado Regional Autodesk Visualization Award

### 2010

- Colorado Regional Industrial Safety Award
- Colorado Regional Entrepreneurship Award
- Colorado Regional Excellence in Design Animation Award

### 2011

- Kansas City Regional Entrepreneurship Award
- Colorado Regional Chairman's Award
- Colorado Regional Woodie Flower Mentor Award, Mr. Bryce McLean
- Colorado Regional Dean's List Finalist, Scott Von Thun

### 2012

- Kansas City Regional Spirit Award
- Colorado Regional Entrepreneurship Award
- Colorado Regional Winner
- Colorado Regional Woodie Flower Mentor Award, Mr. David Murphy
- Colorado Regional Dean's List Finalist, Jasmine Kemble

### 2013

- Kansas City Regional Imagery Award
- Colorado Regional Finalists
- Colorado Regional Chairman's Award

### 2014

- Utah Regional Winner
- Utah Regional Chairman's Award
- Colorado Regional Spirit Award

### 2015

- Utah Regional Engineering Inspiration Award
- Colorado Regional Quality Award

## Tracking Growth

Cougars Gone Wired makes growth and improvement a priority. Over the past seven years, the team has taken advice from and studied the practices of sponsors, local corporations, and other FIRST Robotics teams in order to expand boundaries and raise the bar. Large growth has been made in a short period of time by constantly setting goals and improving technical and business strategies.

Over the past seven years, Cougars Gone Wired has gradually increased the number of people that are involved in STEM and the FIRST program. Membership has increased since our first year, the result of recruitment efforts at Coronado High School's registration days, many community events such as Cool Science and the What If Festival, and word of mouth. The team has increased FIRST involvement by reaching out to elementary schools and middle schools to start Jr. FLL and FLL teams. This includes twelve Jr. FLL teams and five FLL teams in the local community. Various demonstrations throughout the community have generated interest in STEM and FIRST Robotics. Cougars Gone Wired plans to continue these efforts and expand beyond just the present community.

### 2008-2009 (FRC)

- Sponsors
- 1 Robot

### 2009-2010 (FRC and FTC)

- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 1 Robot

### 2010-2011 (FRC and FTC)

- Long Term Partnerships
- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 1 Robot

### 2011-2012 (FRC and FTC)

- FRC Scrimmage Event
- Cougar Kibble
- Long Term Partnerships
- Community Outreach
- Mock Game



- Second Regional
- Sponsors
- 2 Robots

#### 2012-2013 (FRC and FTC)

- Start and run FLL and Jr. FLL teams
- FRC Scrimmage Event
- Cougar Kibble
- Long Term Partnerships
- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 2 Robots

#### 2013-2014 (FRC and FTC)

- FTC Qualifier Event
- Start and run FLL and Jr. FLL teams
- FRC Scrimmage Event
- Cougar Kibble
- Long Term Partnerships
- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 2 Robots

#### 2014-2015 (FRC)

- Start and run FLL and Jr. FLL teams
- FRC Scrimmage Event
- Cougar Kibble
- Long Term Partnerships
- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 2 Robots

2015-2016 (FRC)

- Run FLL and Jr. FLL teams
- FRC Scrimmage Event
- Cougar Kibble
- Long Term Partnerships
- Community Outreach
- Mock Game
- Second Regional
- Sponsors
- 2 Robots

### Team Demographics

Chart 1 compares the mentor and student populations. Sponsor presentations and preseason adversity attracts additional mentor involvement.

*Chart 1*

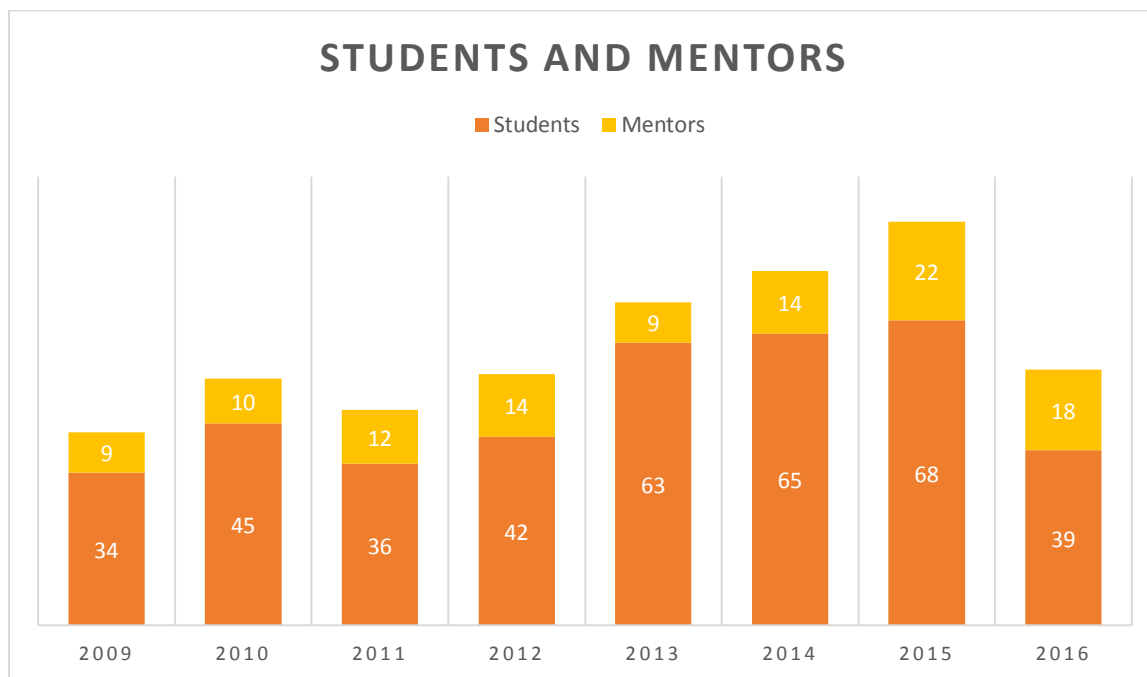


Chart 2 illustrates team membership and increase of younger membership. Leadership works to train these younger members to maintain their involvement through their high school career.

Chart 2

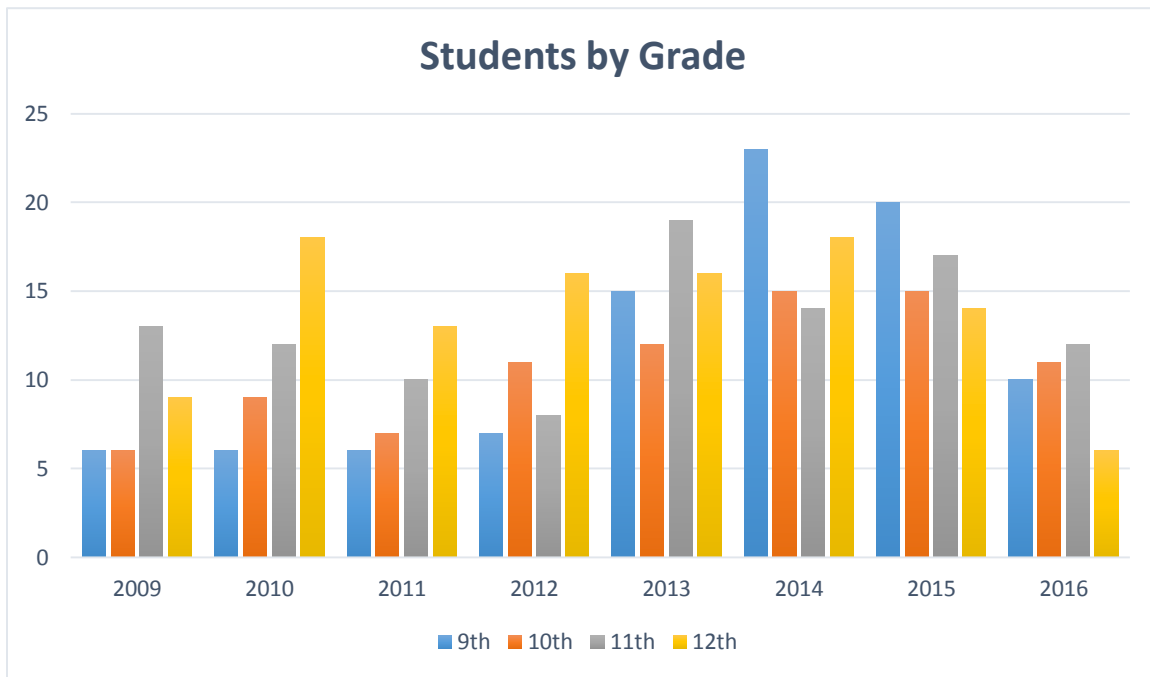


Chart 3 and Chart 4 express the student male to female participation. While there are more males on the team, more females hold leadership positions.

Chart 3

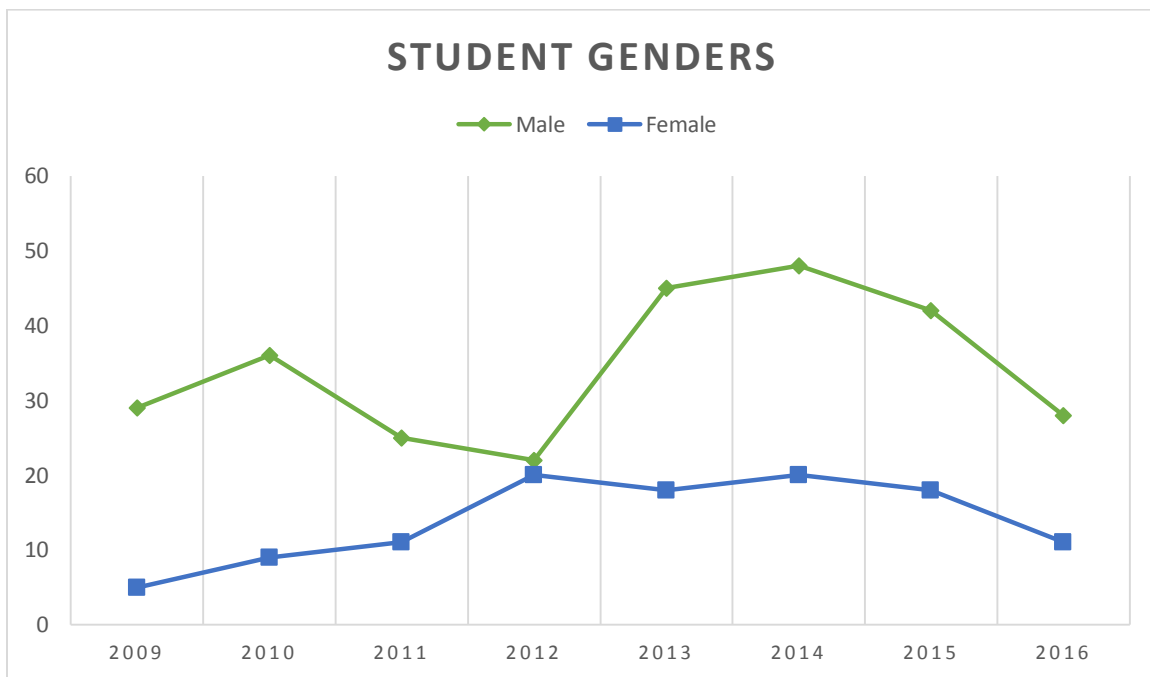
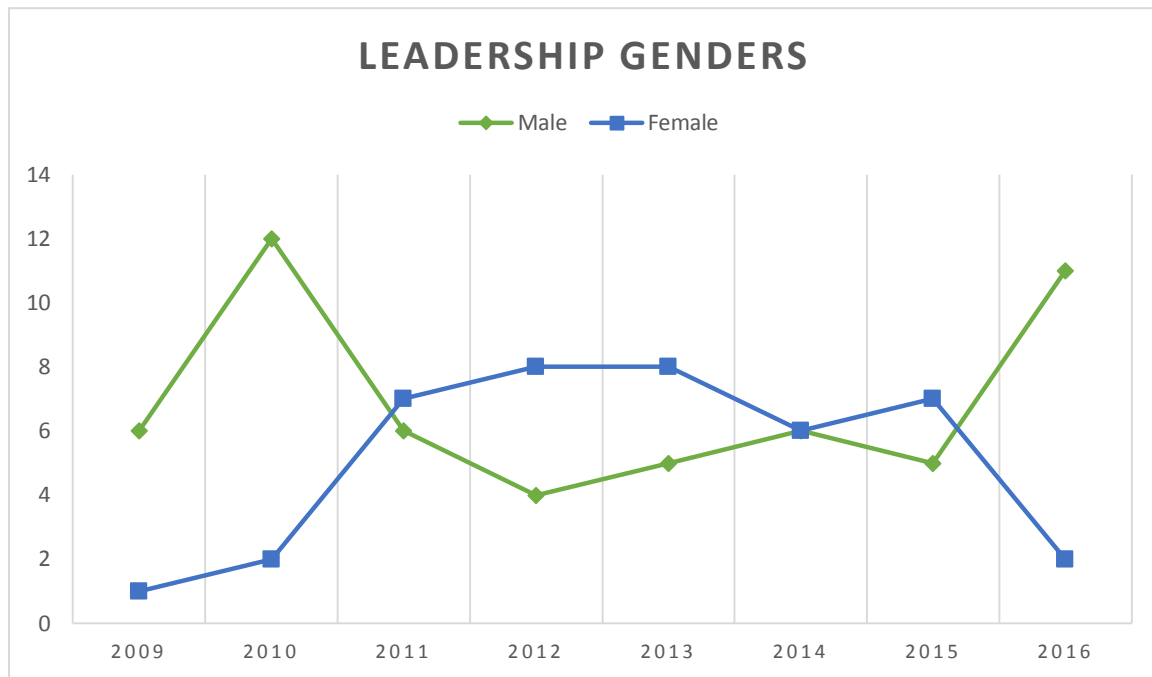
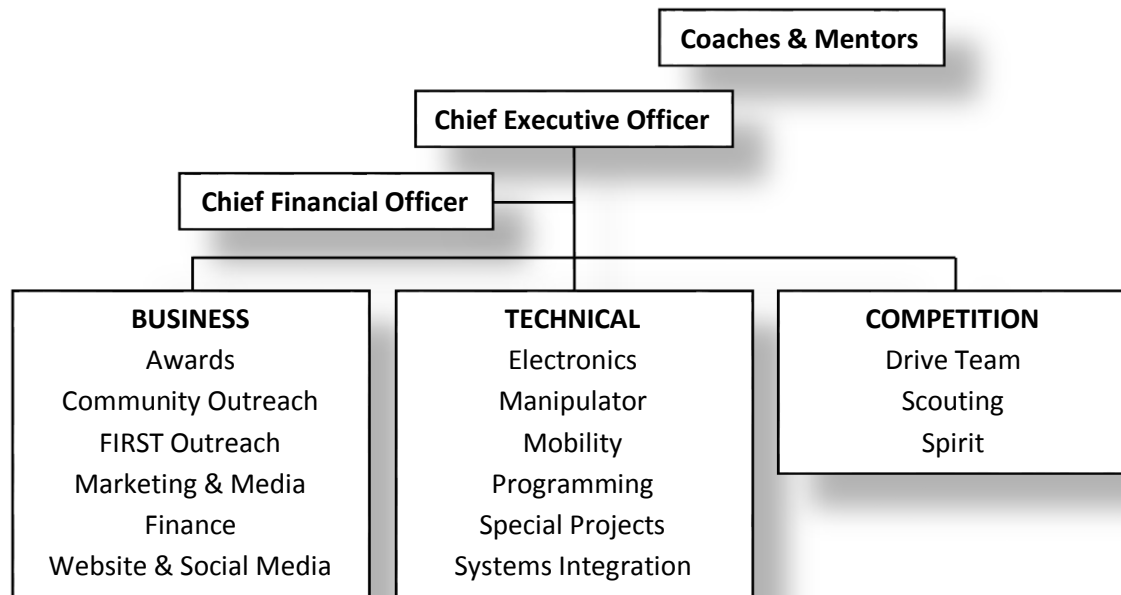


Chart 4



# Operational Plan

## Team Structure



## Student Leadership

The FIRST experience inspires learning and growth as a team and as a business; encouragement of student enthusiasm for STEM remains the highest priority. Cougars Gone Wired maintains a strict “student-led” and “mentor-guided” operation. The “hands-off” mentor build policy has paved the way for enduring student-mentor relationships and encourages student STEM growth.

### *Leadership Positions and Requirements*

Sub-teams are led by VPs who are responsible for ensuring that goals are executed well and on time. They are required to exemplify good role-model characteristics, participate wholly in all team activities, attend at least 90% of team events, and be present for weekly VP meetings.

To obtain leadership positions, students must go through an application process similar to that of a job including submission of a high school transcript, resume, and cover letter. That is followed by individual interviews conducted by a panel of the team’s mentors. The mentors then decide who is best for each position.

The leadership selection process occurs annually. Business leadership is selected in the spring to maintain community and STEM involvement throughout the summer, and technical leadership is selected in the fall to provide VPs with adequate time to train their sub-teams and prepare for build season.

## Job Descriptions

### Coaches and Mentors

Coaches and mentors provide guidance and supervision to the team. They consist of engineers, industry professionals, business owners, teachers, and professors that guide the team as a business, and through the design, fabrication and construction of the robot.

### Student Leaders

Student leaders are in charge of their respective sub-teams. They are responsible for assuring the agenda and goals of the team are met, and the newer members are properly trained.

#### Chief Executive Officer (CEO)

The CEO oversees the overall progress of the team. Much like the VPs, he or she makes sure the team's deadlines are met. They are the spokesperson for community events and sponsor presentations.

#### Chief Financial Officer (CFO)

The CFO is also the Finance VP. Responsibilities include finding potential sponsors, organizing presentations, fundraising, and other student managerial tasks.

#### *Business Sub-Team Leadership*

- Awards VP
- Community Outreach VP
- FIRST Outreach VP
- Marketing & Media VP
- Website & Social Media VP
- Finance VP

#### *Technical Sub-Team Leadership*

- Electronics VP
- Manipulator VP
- Mobility VP
- Programming VP
- Systems Integration VP
- Special Projects VP

### Competition Teams

The competition teams: Scouting, Spirit, and Drive, are different from the technical and business sub-teams. The Drive Team consists of four students: driver, manipulator, human player, and coach. These are selected through tryouts that occur during robot testing on Saturdays between the end of build season and competition. The Spirit and Scouting team includes most members, volunteers design and organize spirit gear, signs, and team cheers. The Scouting team is led by a student VP.

## Business Sub-Teams

### *Awards*

The Awards team applies for select awards each season including the Chairman's, Woodie Flowers, and Entrepreneurship awards. In cooperation with Marketing and Media, they create the Chairman's video and ensure that all awards are submitted by their deadlines.

### *Community Outreach*

The Community Outreach team is in charge of forming and maintaining relations with former and new sponsors, other FIRST teams, and organizations within our community. This sub team leads Cougars Gone Wired in utilizing our resources and manpower to give back to the community.

### *Finance*

Led by the CFO, the Finance team's primary function is to brainstorm, discuss, receive approval for, and execute fundraising ideas. Finance is also in charge of collecting and keeping all member, mentor, parent, alumni, and sponsor information organized and up to date to ease the contact process.

### *FIRST Outreach*

FIRST Outreach VP works alongside the Community Outreach sub team to lead the team in spreading the word and values of FIRST throughout the community. This includes mentoring Jr. FLL and FLL teams, hosting and organizing FIRST events, and doing demonstrations and presentations at local schools and libraries.

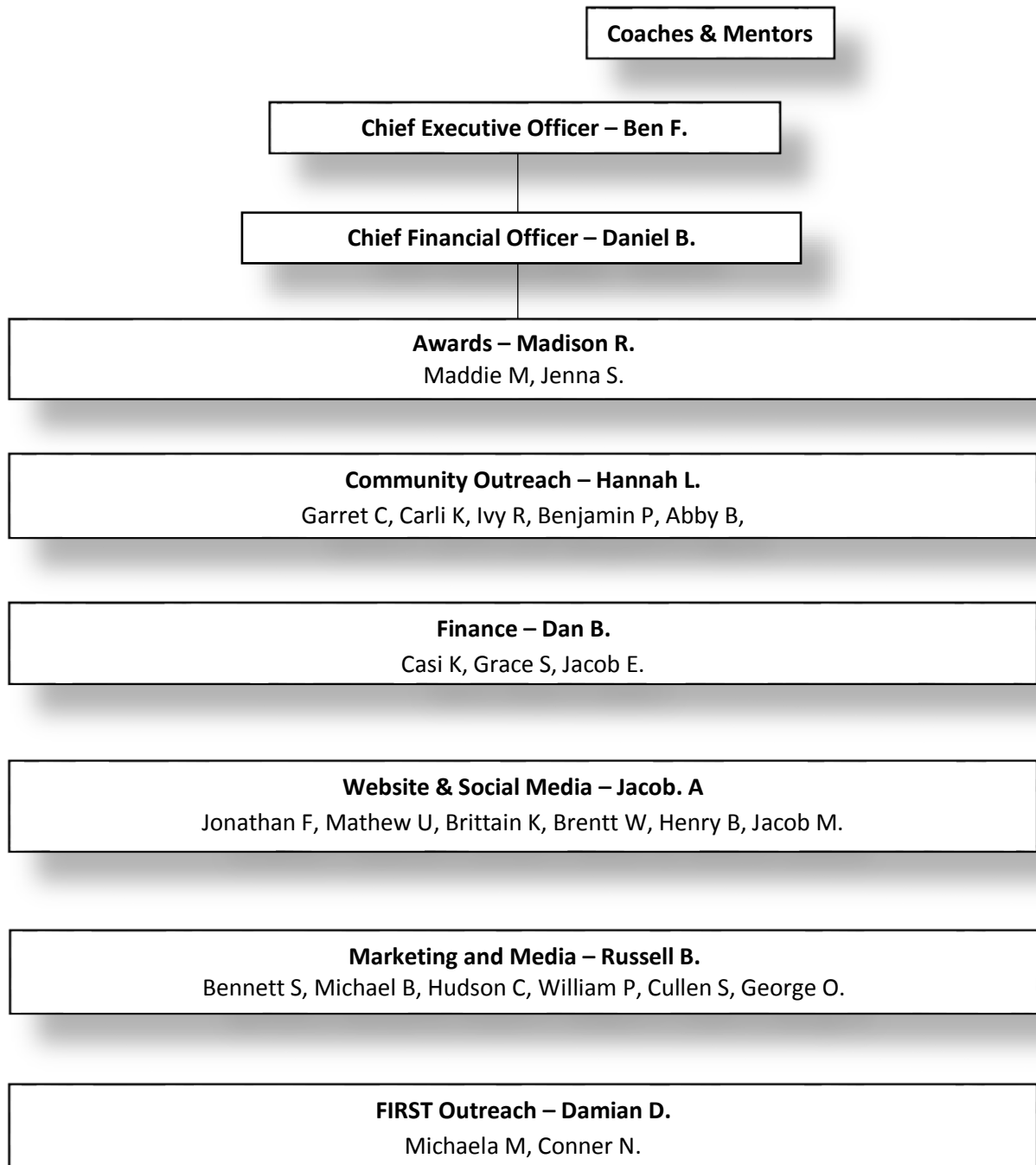
### *Marketing & Media*

Marketing and Media is in charge of getting the team name out to the public. They do this through as many different types of media as possible like the team YouTube channel. They also are responsible creating the Chairman's video with the Awards sub-team, as well as designing the different graphics, tee shirts, and posters.

### *Website & Social Media*

Website & Social Media maintains Cougars Gone Wired's website and social media for sponsors, the community, other FIRST teams, team members, and parents. They are primarily responsible for photos community involvement and events.

*2016 Business Sub-Team Breakdown*





## Technical Sub-Team Tasks

### *Electronics*

The Electronics team, working closely with the Programming team, designs the electronics board, wires the robot, and maintains all the batteries. They assure that all components of the electronics are safe and can support the load of the motors, sensors, and actuators.

### *Manipulator*

The Manipulator team brainstorms, prototype, and oversees all manipulators of the robot. These manipulators control both game pieces and the robot in order to maximize on points and fit to the team's strategy, such manipulators include but do not exclude to shooters and pick-up systems.

### *Mobility*

The Mobility team designs and fabricates the drive train of the robot as well as works closely with Systems Integration to design and fabricate the chassis.

### *Programming*

The Programming sub team programs the robot to accomplish the team's autonomous and tele-operated strategy. It debugs and updates prior robot code, and uses sensors to make driver control easier and more effective.

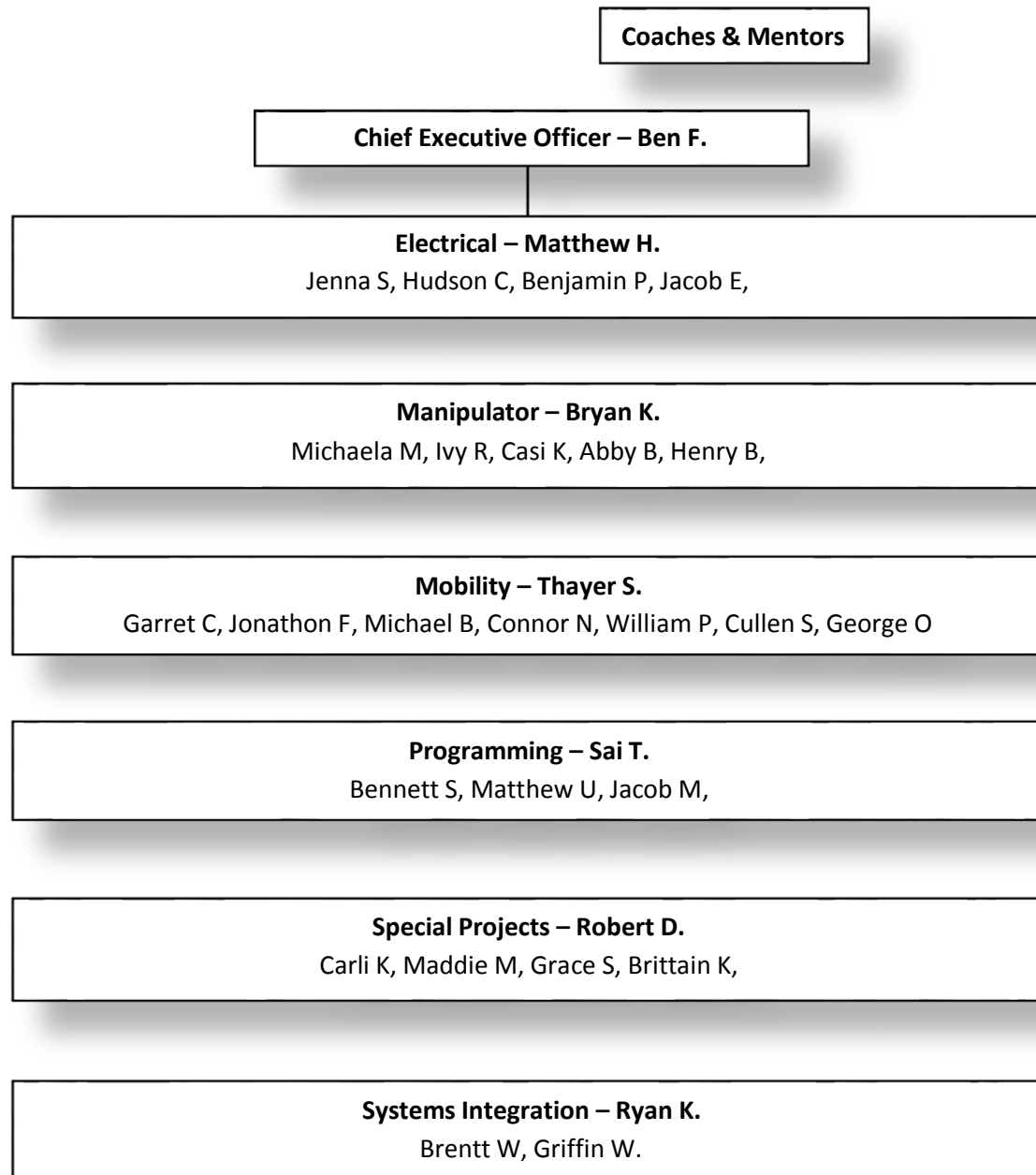
### *Special Projects*

Special Projects builds the field and manufactures all field elements necessary for the Cougars Gone Wired-hosted Pre-Ship Scrimmage. It is in charge of safety, closet cleanup, pit setup, and the crate packing.

### *Systems Integration*

Systems Integration sends representatives to all technical sub teams so that design and constraints are consistent. It then integrates all parts of the robot into a CAD, which is then sent to the team's manufacturer, Vertec.

## 2016 Technical Sub-Team Breakdown



## Build Season Planning

Both business and technical teams work constantly to complete required business and community events, as well as build three robots (prototype, practice, and competition bot) during the six week build period. During this time there is an increased emphasis on the technical side of the team. The CEO uses Microsoft Office Project to make sure everyone stays on track with the season's goals.

## Off-Season Planning

Between the months of April and January, the team is focused on growing and developing. This period is used for building and maintaining relationships within the community, raising funds, participating in community events, and making connections between team members to strengthen the team as a whole.

Cougars Gone Wired utilizes the preseason to ensure that every student has a chance to develop the skills necessary to be successful in FRC. The technical VP's hold classes outside of regular team hours to educate members on fundamental and in-depth concepts in preparation for build season.

# Building Bonds

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## Team Bonds

### Member Bonds

Cougars Gone Wired recruits at Coronado registration, community events, and an annual informational barbecue. Preseason meetings focus on team building and technical education. Members socialize outside of meeting hours weekly at Village Inn's Pie Rush Wednesday, and movie nights hosted by team members. These gatherings solidify the friendships between members, retaining and attracting new members to the Cougars Gone Wired family.

### Alumni Bonds

The team's family atmosphere encourages alumni to come back and participate in kickoff, community outreach, team meetings, and competitions. Alumni are valuable to the team as mentors for sharing robotics experience, as well as the knowledge they have gained beyond high school. Cougars Gone Wired is unique in the strength of the bonds formed between members, alumni, and mentors, and the constant support between these groups, inside and outside of robotics. Events such as the annual Kick-Off Cake party gather the Cougars Gone Wired family and reinforce alumni's perpetual membership on the team.

### Parent Bonds

#### *Cougar Kibble*

For the first few years of Cougars Gone Wired's existence, the students relied on local restaurants for sustenance during the busy hours of build season. For the 2012 build season, the parents banded together and organized a family-supplied and served meal program, Cougar Kibble.

Cougar Kibble has successfully fed our team of about 40 members every day of build season, including Saturdays. It has reduced weather and driving risk, and ensured nutritional, balanced diets for team members and mentors. This program is not only an asset to the welfare of students and productivity of work hours, but has blossomed into a facet of the team's family atmosphere.

### Mentor Bonds

Over the years, Cougars Gone Wired has been graced with dedicated and supportive mentors. The "hands off" mentor build policy has created an atmosphere in which mentors can guide and share their knowledge, but still allow students to utilize their creativity and get hands on experience. This practice not only allows students to learn from the mentors, but for the mentors to also learn from the students as they overcome challenges together. Mentors endure the long hours alongside the team, solidifying the Cougars Gone Wired family atmosphere.

The team is extremely grateful for the bonds forged with, and the constant guidance and support from these benevolent and devoted mentors.

## Community Outreach

### 2015-2016 Outreach and Involvement

Event	Date	Hours	Category
Elks Lodge Clean Up	16-May-15	3	Sponsor Volunteerism
AHA Heart Walk Setup and Orientation	5-Jun-15	2	Volunteerism
AHA Heart Walk	6-Jun-15	3	Volunteerism
Space Foundation Summer of Discovery Demo	20-Jun-15	4	STEM Outreach
CAPS Citadel Mall Public Safety Day	21-Jun-15	2	STEM Outreach
SCC Snickers Challenge	26-Jun-15	2	Volunteerism
Space Foundation Summer of Discovery Demo	11-Jul-15	4	STEM Outreach
Manitou Library SRP Party Demo	17-Jul-15	3	STEM Outreach
East Library SRP Party Demo	24-Jul-15	3	STEM Outreach
Palmer Lake Library SRP Party Demo	28-Jul-15	3	STEM Outreach
Fountain Library SRP Party Demo	31-Jul-15	3	STEM Outreach
Coronado High School Registration	11-Aug-15 12-Aug-15 13-Aug-15	24	STEM Outreach School Service
Elks Lodge Margaritaville	15-Aug-15	5	Sponsor Volunteerism
Freshman Orientation	18-Aug-15	3	Volunteerism
Back to School Bash	21-Aug-15	3	School Service
Concessions Sales	28-Aug-15	4	School Service
Annual Team Barbecue	29-Aug-15	3	School Service
Susan G. Komen Race for the Cure	13-Sept-15	3	Volunteerism
Fox21 Newscast- "What If" Festival Preview	18-Sept-15	1	STEM Outreach
Homecoming Float Project- Build Day	18-Sept-15	6	School Service

Coronado Homecoming Parade	19-Sept-15	2	School Service
"What If" Festival	19-Sept-15	8	STEM Outreach
Madison Elementary School Field Day	25-Sept-15	4	Volunteerism
Cool Science Carnival at UCCS	3-Oct-15	8	STEM Outreach
Catalyst Campus Beer, Bots, and Brats	7-Oct-15	2	STEM Outreach
Boo at the Zoo	24-Oct-15	5	Volunteerism
Coronado High School Fall Festival	30-Oct-15	3	School Service
Old Colorado City Halloween Safe Treats	31-Oct-15	4	Volunteerism
8 <sup>th</sup> Grade Career Fair- Freedom Financial Expo Center	3-Nov-15	7	STEM Outreach
Southern Colorado FLL Qualifying Event	5-Oct-13	9	FIRST Volunteerism
Jr. FLL Showcase	20-Nov-15	2	FIRST Volunteerism
Elks Lodge Charity Ball	21-Nov-15	5	Sponsor Volunteerism
University School of Colorado Springs Demo	26-Jan-16	3	STEM Outreach
Total		146	

The team's connections have multiplied over its eight years, enabling the acquisition of resources and expansion of impact. The most valuable resource is the membership of 68 students and 22 mentors which is dedicated to giving demos, mentoring younger students, and volunteering. Participation in Coronado High School events and work with national service programs attracts new audiences. At demos and festivals, the team encourages kids to drive the robots and engages in conversations with children, parents, and professionals to educate and attract them to STEM and the FIRST community.

#### *International Outreach*

Cougars Gone Wired's FIRST involvement has pushed the capacities of the community outreach sub-team, requiring a new FIRST outreach team to continue past FIRST initiatives and seek new connections. This new sub-team responded to Dean Kamen's call for international outreach. In October, a Cougars Gone Wired team member used her family in Puerto Rico to contact La Casa Cuna de San Juan Orphanage. Through a fundraiser movie night, the team was able to collect over 90 items like diapers, soap, and medical kits along with FIRST pamphlets translated in Spanish, directions on how to launch Jr. FLL teams, and a Jr. FLL Lego starter-kit to ship to the orphanage. The team hopes that this connection will lead to mentoring a team overseas in a few years.

## FIRST Bonds

Cougars Gone Wired perpetually stresses the values of FIRST including Gracious Professionalism and Coopertition through community outreach as it strives to emulate the model of an ideal FIRST team.

Other FRC teams are invited to participate in activities throughout the year including Mock Game, and many community service events. During build season, the team builds an entire practice field which opens to teams every Saturday, and is used for the annual Cougars Gone Wired-hosted FRC Scrimmage. This scrimmage gives all FRC teams wanting to participate an opportunity to test robots and work with other teams. The 2016 Scrimmage was extremely successful, with 19 teams in attendance from all over Colorado and Wyoming.

Cougars Gone Wired started the first 5 Jr. FLL teams in southern Colorado, and has expanded to 12 teams across 4 elementary schools. To each team a 2996 member offers technical support and advice on program sustainability. Cougars Gone Wired donates resources to start these teams, and volunteers time to run the annual Southern Colorado Jr. FLL Showcase. In 2010, FTC Team 3635 was welcomed into the Cougars Gone Wired family. Since then, the team hosted the 2014 FTC Qualifier.

## School District Bonds

Cougars Gone Wired has taken the initiative to become more visible within the school district. A 2013 summer meeting between the team's articulate leadership, and the district's staff including the superintendent, middle school and high school executive directors, and head of the IT department allowed the team to address and resolve many issues with the district's technological and administrative policies which interfered with team efficiency and productivity. This also opened a communicative pathway to ease resolution of future difficulties.

This relationship has been utilized to spread FIRST and STEM within the community. The team had the opportunity to be the only student organization represented at the district's annual General Leadership Meeting. They allowed us to speak and promote FIRST and STEM to the audience of all district level department heads. Cougars Gone Wired was also featured in a nonprofit ad campaign which was shown in local movie theaters, intended to attract students to the school district

Coronado High School itself has graciously provided Cougars Gone Wired with work space and the utilization of the school's machinery and wood shop resources, which has been crucial to the team's existence and success. They also provide the team with space to host events which expand the outreach of FIRST in the Colorado Springs community. The team has also formed strong partnerships with many organizations within Coronado High School. A relationship with Student Council allows for advertising and mutual fundraiser support, and a connection with the catering class provides meals for the team on occasion.


# Finances

## 2015-2016 Financial Analysis and Statement

The majority of the team's revenue comes from STEM-related corporate sponsors.

<b>Entrance Fees</b>	Arizona Regional	\$ 4,000
	Colorado Regional	\$ 5,000
	Championship (Tentative)	\$ 5,000
<b>Lodging</b>	Arizona Regional Hotel	\$ 5,300
	Colorado Regional Hotel	\$ 3,800
	Championship Hotel (Tentative)	\$ 7,500
<b>Transportation</b>	Bus for Championship (Tentative)	\$ 7,000
	Robot Materials (Prototype, Practice, Competition)	\$ 5,300
<b>Build Season</b>	Field Materials	\$ 2,000
	Miscellaneous	\$ 2,500
	FIRST Outreach	\$ 400
<b>Community Outreach</b>	Local Outreach	\$ 300
	<b>Total</b>	<b>\$ 48,100</b>

## 2016 Bill of Materials

 <p>This is a sample Cost Accounting Worksheet (CAW) for use in the 2016 FIRST<sup>®</sup> Robotics Competition Game, STRONGHOLD<sup>SM</sup>. All parts required by T16 should be entered into the CAW. The CAW helps Inspectors verify part use and legality on Robots. This year teams do not have to report individual COTS items that are less than \$5 USD each or are Kit of Parts items.</p>							
<b>2016 FIRST Robotics Competition Bill of Materials</b>							
Team Name: <u>Cougars Gone Wired</u>		Team #: <u>2996</u>		Date: _____			
Event: _____		City: <u>Colorado Springs</u>		State: <u>Colorado</u>			
Item	Description	Material	Source	Quantity	Measurement	Unit Price	Total Price
Major System Names Here	Describe the Part (Axle, Bearing, Lifter, Solenoid)	What is it made from	Where did you buy it	How Many	Piece, Inch, Etc.	Cost Per Unit (\$)	
<b>Chassis</b>							
Cim Motor	Central Drive Train Motors	Various Mater.	AndyMark	4	Item	\$28.00	\$112.00
Toughbox Mini	Gear assembly for drive	Various Mater.	AndyMark	2	Item	\$77.00	\$154.00
Pneumatic Wheel	Inflated wheel, 8"	Rubber	AndyMark	2	Item	\$37.00	\$74.00
HIGrip Wheel	Basic Treaded Wheel, 6"	Polycarbonate	AndyMark	6	Item	\$15.00	\$90.00
Belt	Drive Belt	Kevlar/Rubber	VexPro	6	Item	\$11.49	\$68.94
Pully	Drive Pulley	Polycarbonate	AndyMark	12	Item	\$6.00	\$72.00
Hex Axel	1/2" wheel axle	7075 aluminum	AndyMark	4	Foot	\$5.00	\$20.00
Hex Head Bolt	3/8-16 x 6 axle	Steel	AndyMark	6	Item	\$2.50	\$15.00
Sheetmetal	6x10 sheet	5052 aluminum	Vertec	1	Item	\$226.80	\$226.80
Hex Bearing	1/2" axle bearing	steel	AndyMark	2	Item	\$6.00	\$12.00
					Subtotals:		<b>\$844.74</b>
<b>Shooter</b>							
Mini Cim Motor	Shooting motor	Various Mater	Andymark	3	Item	\$6.99	\$20.97
Toughbox	Gear assembly for shooter	Al/Steel	Andymark	2	Item	\$75.00	\$150.00
Hex Bearing	1/2" axle bearing	steel	Andymark	2	Item	\$6.00	\$12.00
Planetary Gearbox	Feeder motor	Various Mater	Andymark	1	Item	\$46.50	\$46.50
Colson wheels	Shooter wheels	65 Shore A	VexPro	4	Item	\$12.99	\$51.96
Helical Shaft Couplings	shaft coupler	Aluminum 6065	McMaster-Carr	2	Item	\$40.00	\$80.00
					Subtotals:		<b>\$361.43</b>
<b>Electronics</b>							
NI roboRIO	Robot controller	Various Mater	Andymark	1	Item	\$435.00	\$435.00
Power Distribution Panel	Power distributor	Various Mater	Andymark	1	Item	\$200.00	\$200.00
Talon SRX Speed Controller	Motor controller	Various Mater	Andymark	6	Item	\$90.00	\$540.00
Voltage Regulator Module	voltage regulator	Various Mater	Andymark	1	Item	\$46.00	\$46.00
120 Amp Breaker	Breaker	Various Mater	Andymark	1	Item	\$30.00	\$30.00
Talon srspeed controller	Motor controller	Various Mater	Andymark	5	Item	\$65.00	\$325.00
					Subtotals:		<b>\$1,576.00</b>
<b>Defense Manip/hanger</b>							
Window motor	Motor	Various Mater	Partsgeek	2	Item	\$35.28	\$70.56
Flipper	Carbon fiber sheet	Carbon fiber	Acp	1	Item	\$78.00	\$78.00
Pvc	Pvc tube 3in	Plastic	Lowes	1	Item	\$9.38	\$9.38
Banebot	Motor	steel	BaneBots	1	Item	\$17.50	\$17.50
16:1 gearbox	Gearbox	Various Mater	Andymark	1	Item	\$56.50	\$56.50
Tapemeasure	16 ft tape measure	Spring steel	Stanley	1	Item	\$20.00	\$20.00
Wheels	2 inch wheels	Rubber	VexPro	2	Item	\$12.99	\$25.98
					Subtotals:		<b>\$277.92</b>



## Sponsors

Sponsors are important team members. Their generous support allows the team to experience the array of FIRST opportunities. In return, sponsors are invited to events and celebrations, receive robot demos, and are featured on team shirts.

Many STEM related sponsors, specifically Aeroflex, Vertec, and Spectranetics, offer educational tours for Cougars Gone Wired leadership and the presentation team which demonstrate the value and real-life applicability of skills learned through FIRST programs.



## Presentation Team

Leadership coordinates an interview process to determine presentation team membership. This group of students then presents to potential sponsors to detail the team's successes, to explain FIRST's mission, and to seek financial support.

The team connects with potential sponsors through mentors, parents, and community events. Mentors assist in scheduling presentations with current and potential sponsors.

The 2015-2016 presentation team consists of three members that are primary presenters, and the other two are alternates in case of unforeseen issues.

## Team Fundraising Growth

Cougars Gone Wired strives to raise approximately \$5,000 annually through fundraisers. During the off-season, the team sold the Hexbugs and FIRST E-Watt Saver lightbulbs remaining from previous seasons. The team has begun planning for a robotics summer camp for the summer of 2016.

- Hexbugs
- FIRST Green E-Watt Saver LED Light Bulbs

### 2013

- Hexbugs
- FIRST Green E-Watt Saver LED Light Bulbs
- "Mind Seizure" and "Ghoul's Gulch" haunted house tickets.

### 2014

- Hexbugs and FIRST Green E-Watt Saver Light Bulbs
  - Leftovers from last year
  - Sold at Holiday Bazaar

### 2015

- FUNdraisers of Colorado coupon books
- Old Chicago "Pizza Palz" cards
- "Geared for Greatness" water bottles

# Future Plans and Goals

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## Business

### Executive Leadership

- Develop the pass-down process and improve the flow of information through the transition of leadership
- Increase communication during the summer to set a more solid foundation to go into the school year with
- Expand and improve the new-student mentor program to ensure that the all students are prepared for build season

### Community Outreach

- Develop data collection system for hours and attendance of community outreach events
- Improve new member attendance at community outreach events
- Take responsibility for informing new members on team history
- Continue international outreach and foster relationship with La Casa Cuna de San Juan orphanage

### FIRST Outreach

- To specify a FIRST Outreach sub-team independent of the Community Outreach sub-team to more effectively delegate tasks and improve FIRST involvement
- Utilize the summer to initiate FIRST outreach and form new Jr. FLL and FLL teams prior to the start of the school year
- Make contact with Colorado Springs' sister city, Fujiyoshida, Japan, to start FIRST teams and develop STEM oriented relationships

### Awards

- To have a cohesive rough draft of the Chairman's essay prior to kickoff
- Obtain footage of summer and preseason community outreach events

### Media, Website, and Marketing

- Submit for the Media & Technology Innovation Award
- Devise a Media Plan that strategizes marketing and internet advertising on the team's website and social media
- Use social media to more effectively spread the FIRST message

### Finance

- Maintain the contact database initiated this year to ease communication with team members, alumni, and past and current sponsors
- Frequently update the business plan to keep a cohesive document which accurately summarizes the team's business goals, development, and organization

- Dedicate a section of the business plan specifically to sustainability analysis to perpetuate learning from past experiences and set concrete goals for the future

## Technical

### Programming

- Improve programmer preseason training
- Involve more members of the programming sub-team and utilize source control merging

### Systems Integration

- Train team members in Autodesk Inventor, Solidworks, and PTC Creo
- Inventory and reorganize current hardware resources to prepare for build season
- Ensure full technical documentation of all sub-teams' activity by assigning Systems Integration members as recorders for each respective sub-team

### Special Projects

- Use preseason time to educate members on equipment and power tool safety, and to update the safety handbook and kit
- Encourage more team spirit and continue producing new spirit gear and signs
- Produce mini field model for game after kickoff as it was beneficial to strategizing this year

### Manipulator

- Utilize the preseason to train individual creativity for brainstorming
- Create more specific design matrices to improve the prototyping process
- Specify a breakdown of the manipulator sub-team to ease delegation and improve productivity when facing multiple tasks

### Mobility

- Complete chassis and drive train design by the end of the first week of build season
- Finish the prototype no more than two days after the final design is decided on
- After chassis completion, delegate sub-team members to other sub-teams to assist however possible

### Electronics

- Work to communicate more effectively with other sub-teams to improve efficiency
- Calculate the weight of all necessary components to mitigate weight-related issues
- Improve the organization of electronics-related supplies
- Maintain a welcome environment that helps members enjoy learning about electronics

# Contact Information

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## Website

- team2996.com

## Team Email

- cougars.gonewired@gmail.com

## Facebook:

- facebook.com/cougarsgonewired
- [twitter.com/frc2996](https://twitter.com/frc2996)
- instagram.com/cougarsgonewired
- youtube.com/frc2996
- firstinspires.org/

## Main Contacts:

- Bryce McLean  
Title: Head Coach  
Email: Bryce.mclean@d11.org  
Phone: (719) 328-3759

## Team Meeting Information:

- Coronado High School  
Off Season – Wednesdays from 5 to 8  
Build Season – Monday through Friday from 5 to 8, Saturdays from 9 to 4

## Sponsorship Information:

- Checks should be made payable to “Coronado High School”
- Mailing Address:  
Coronado High School  
1590 W. Fillmore St.  
Colorado Springs, Colorado  
80904
- Federal ID Number: 84-600-1179