

FIRST TEAM 2486 CocoNuts

Chairman's Award Executive Summary Questions:

Briefly describe the impact of the FIRST Program on team participants with special emphasis on the 2010/2011 season and the preceding two years.

2486 is dedicated to providing a life changing experience for our members through FIRST.

- 100% of alumni have gone to college in STEM majors
- Alumni have been offered over \$1 million in scholarships
- One of our coaches is working on a Master's degree & thesis in robotics curriculum
- Because of FIRST, many low income minorities choose to continue their education
- Outreach & mentoring activities inspire 'Nuts to continue community service, foster self-confidence and excel in school & life

Examples of role model characteristics for other teams to emulate.

The CocoNuts epitomize the ideals of FIRST by:

- Maintaining a sense of humor and a positive attitude
- Striving to become a positive community influence
- Selflessly helping to start & mentor JFLL, FLL, FTC teams
- Ceaselessly spreading the awareness of FIRST and STEM
- Being Graciously Professional at school, on the field, and when grandma's not looking!
- Letting student members make team decisions
- Providing opportunities for students to develop real world skills (public speaking, problem solving)

Describe the impact of the FIRST program on your team and community with special emphasis on the 2010/2011 season and the preceding two years.

2486 has become a positive community asset by

- Improving the image of CHS in Flagstaff. CHS was up for closure, but stayed open because of 2486 & our STEM excellence
- 2486 is a prominent figure in NAZ: we are seen as a role model for students
- Presenting to prospective applicants for Coconino Institute of Technology
- Hosting the High Altitude Robotics Extravaganza
 - 3rd NAZ FLL Regional
 - 2nd AZ FTC Championship: team attendance doubled
 - FTC & FLL Scrimmages
- Team size doubled from '10 to '11

Team's innovative methods to spread the FIRST message.

2486 continues to foster awareness & appreciation of STEM

Continuing Outreach

- NAU Summer Enrichment Program: created & taught robotics curricula to disadvantaged youth
- Invited AZ officials to events
- STEM events at K-8 schools
- Presented to 1000+ kids in 1 day about FIRST
- NAZ Career & Tech Expo, Microchip demo
- Presentations, Festival of Science, Community parades, County Fair

Future Outreach

- Write a grant to begin 10+ JFLL teams in NAZ
- Design & teach a robotics summer camp

Describe the strength of your partnerships with special emphasis on the 2010/2011 season and the preceding two years.

In the last 3 years 2486 has partnered with CHS groups

- Danceline
- Culinary arts
- NHS
- Special Olympics
- Administration

Business/fiscal support

- JCPenney FIRST team
- Coconino County Board of Supervisors
- AZ Science Foundation/Stardust Grant
- B & T Glass
- Rodeway Inn
- Local restaurants

Mentors/Volunteers

- NAU
- WL Gore: FLL/FTC judges & technical mentors
- City of Flagstaff

Coconino County Superintendant

- FLL Expansion to home schools

Teambuilding

- Camping trips
- Meals during build
- Team bonding days

Team's communications methods and results.

FLL Coach's Workshops—empowered rookie teams

2486 mentored 90% of Flagstaff FLL teams at least once a week: success at regional & state competitions

2486 corresponded with AZ & CO FTC teams—FTC attendance doubled

Numerous print, video, radio & internet features advertise events & achievements—recognizable in Flagstaff, financial support

Presentations to school board & civic orgs—Community support

Partnership with NAU Science/Math teacher program—FLL/FTC volunteers

Website & social media—networking

Other matters of interest to the FIRST judges if any.

Flagstaff is a rural community 2 hours from major cities

Team composed of students with troubled history, diverse cultures & different learning abilities

Won 2009 AZ Chairman's as 2nd year team

2486 has a '10 Dean's List Finalist

1 coach & 1 student honored as AZ Science Foundation Innovation Heroes

AZ USFIRST Girls Rep: Girls represent 1/3 of 2486

Other awards: Inspire, Think, Judge's, Website, Engineering Inspiration

Full length HD documentary in works

4 FLL Mentor Awards given to 'Nuts in 3 years

Judges Questions 2011:**Team History**

This is our 4th year. In 3 years we've been honored to receive the AZ FTC Inspire, AZ Chairman's, & AZ Engineering Inspiration Awards. Our team grew from 7 members our 1st year to 24 in 2011. We continue to inspire kids in Northern AZ (NAZ).

Team Goals

Our goals are to continue the growth of FIRST in AZ, especially on Native American Reservations by expanding FLL and FTC. We will begin JFLL in NAZ in Fall '11, and teach a robotics summer camp in '11 to inspire kids and adults of all ages.

Team's *FIRST* Impact

2486 hosted the 3rd NAZ FLL Regional, AZ FTC Championship, & FLL & FTC scrimmages in the High Altitude Robotics Extravaganza. 90% of NAZ FLL teams had a 2486 mentor. Competing FTC teams doubled from 2009. We presented in Prescott to 1000+ students.

Community Description

2486 is the force behind the initiative to get students excited about STEM in our small, rural community of Flagstaff. Our diverse community centers on the university, schools & small businesses. We are seen as respected community role models.

Team Strengths

Our team strengths are diversity, inclusiveness, quality craftsmanship, work ethic, pride, gracious professionalism, a big dose of humor & a sense of family! We take the initiative to organize community events to spread our FIRST and STEM enthusiasm.

Most Significant Challenge Overcome

In '10, FUSD closed 4 schools. CHS was considered for closure, but stayed open because of 2486 & our STEM excellence. A conflict with a sports event caused us to move FTC to a new venue with under 2 weeks notice. 2486 keeps a Can Do attitude.

Robot and Game Strategy

2486 is aiming high with our 8 wheel drive train that will shift between speed and maneuverability and our articulating hand to place tubes on the high pegs. We have collaborated with a rookie team and to aid them we are building two minibots.

Most Competitive for Which Awards

Winning the award is not as important as the journey. 2486 is a Chairman's Team because of our extensive outreach efforts & our dedication to FIRST. We are also competitive for the Inspiration, GP, Spirit, Imagery, Design, Quality & Website Awards.

Funding Sources

2486 is a JCPenney team. We are supported by Coconino County Board of Supervisors. Much of our financial support has come from the Flagstaff community through donations & public school tax credits. We received a Stardust Foundation grant for 2011.

Public Awareness

We continue to be featured in local & national media. Our website utilizes social media. We are involved in local science festivals, CHS & other school events, parades, & workshops. Those in NAZ who know of FIRST, know because of our efforts.

FIRST TEAM 2486 THE COCONUTS PRESENT:

An Epic Chairman's Award Essay

"Four Years of Going Nuts!"

In the FIRST forest up in the Ponderosa Pines of Flagstaff, AZ, we find a scurry of red-shirted CocoNuts (2486) gathered around a campfire toasting marshmallows & telling stories of Inspiration, Gracious Professionalism, & Family. At this annual team retreat, the veteran 'Nuts take the opportunity to pass down the knowledge they had gained through their 4 years in FIRST. Bright-eyed & bushy tailed, the younger 'Nuts listened eagerly.

As one of the veteran 'Nuts piped up, vivid images of the early days of our team passed before their eyes. In 2007, there was a wasteland entirely devoid of FIRST in Northern Arizona (NAZ). What started as a team of mostly freshman boys has blossomed into a diverse, eclectic group of driven individuals all striving toward the same goal: changing the culture by spreading the word of FIRST with Gracious Professionalism & Rational Passion. Those young lads were changed by their visit to the FTC World Championship on the wings of the AZ Inspire Award. The energy & passion they saw in the FRC pit put them at a crossroads. Which path would they choose to return as an FRC team: an exceptional robot or an extraordinary impact? They were quick to decide that the changes worked in their community would be more lasting & more rewarding. Thus began their journey to transform NAZ into a FIRST-rich oasis.

The team saw the images in the fire: reaching out at the Coconino County Fair, Flagstaff Festival of Science, July 4th parades, CHS homecoming, science events at local elementary & middle schools, presentations, demonstrations & dancing robots. 2486 presented to school boards, city council members, civic organizations & future FIRSTers. They were showcased at the Coconino County Coalition for Youth: Voices in Action, & spoke to 50 teachers at the Excellence in Afterschool Programs conference. Social media & YouTube know the 'Nuts well. 2486 journeyed to Prescott with their mascot, Rocky the Squirrel, to present to over 1000 students at 8 schools in 1 day & meet with the superintendent & assistant superintendent of 2 districts.

2486 was invited by NAZ University (NAU) Summer Enrichment Program to design & teach a robotics curriculum with a Mars theme using the LEGO NXT kit & software in an FLL style. Over 5 weeks in the last 2 years, they impacted over 100 underprivileged, underrepresented students from across AZ. NAU employed a 'Nuts grad as a full time counselor in 2010 & will likely employ another this summer. She said, "It was inspiring for us to see how much these kids who had no motivation in life or school now want to succeed in & continue in science & engineering because of their robotics experience." 2486 was the instrument for transformation of these students.

2486 brought FIRST to NAZ in a big way. In 2008, they started 16 FLL teams in Flagstaff, which jumped to 26 in 2009: an explosion of FIRST! 20 returned in 2010, a small drop due to a district-wide reconsolidation of boundaries & the closure of 4 schools. 90% of the local teams had a 'Nut mentor at least once a week. The 'Nuts are expecting the FLL program to grow further & to reach the maximum capacity for the regional in 2011. For 3 years, NAZ has drawn teams from Flagstaff, Sedona, Kingman & Phoenix. One 'Nut drove 50 miles to mentor a rookie FLL team in

Leupp, the first on the Navajo Reservation. They continue to earn glowing praise from teams, coaches, volunteers & community members for the professionalism of the events they host. In a letter of support praising our efforts, retired FUSD superintendent Kevin Brown wrote, "I'm amazed at how the energy level stayed up all day."

2486 was asked by FIRST to take over as the AZ Affiliate Partner of FTC in 2009. That year, they daringly hosted the FLL regional & the FTC championship on the same day in the same venue: thus the High Altitude Robotics Extravaganza was born! In the 2010 FTC Get Over It! season, the number of attending teams doubled from 8 to 16, including 1 from Colorado. Members of the AZ FIRST planning committee attended in stealth & were amazed by the 'Nuts' expertise. 2486 members & family are essential to run FLL & FTC: all volunteers except judges & refs are 'Nuts. A handful of "MiniNuts" worked with a new coach in this year's FTC competition as a way to learn the ways of FIRST. The Minis won the Think Award, were 2nd seeded, & were runners up for Inspire.

"We tallied it up," the veteran member said, "in 3 years 2486 volunteered over 5700 hours in outreach/service & countless hours of mentoring! That's thousands of people we've inspired through FIRST." The new members had to pick their lower jaws off the ground: they were blown away by the accomplishments of a few 'Nuts in so little time! The team saw that inspiration runs both ways: as they've inspired others, so they've been inspired too. All 'Nuts are inspired by the bionic, passionate, unflappable coaches who take on robotics as a 2nd full time job.

The stories turned to GP. A veteran 'Nut remembered a time when 2486 had 2 coaches & little outside help. Now parents, professionals from WL GORE, & NAU professors aid in the construction of the robot & play key volunteer roles at annual FIRST events. NAU is producing an HD documentary on the 'Nuts. GORE mentors provide expertise in programming, pneumatics & design. Mr. Horn, CHS CAD instructor, is helping the 'Nuts design the robot completely in SolidWorks, mill custom parts & tests for the robot before it's fabricated.

2486 was given a JCPenney grant & honored the local manager at an FTC event. The Flagstaff Mall will be showcasing 2486 at an expo to celebrate their accomplishments together. Coconino County Supervisor Liz Archuleta & the Board contributed \$1000 to local FIRST events. The 'Nuts have been sponsored by the AZ Science Foundation (SFAZ) from the start. The Flagstaff community has rallied behind 2486 to raise funds to send 'Nuts to World Championships 3 years running. Tax credit donations from strangers, donations of prizes for a drawing at a huge spaghetti dinner from local businesses, food donations for tournaments, & fundraisers at CHS add up quickly to allow 'Nuts to travel & continue to work FIRST magic. CHS administrators hired 'Nuts to create custom honor roll key chains & 2486 has collaborated through joint fundraisers with CHS culinary arts, Special Olympics, & baton.

It is widely known that help is available from 'Nuts at competition with technical issues, programming, & presentation skills. 2486 is mentoring 2 rookie teams in PHX this season. FRC 842 helped at FTC State with technical volunteers & taught 'Nuts webcasting. 'Nuts talk & dance with alliance partners before each match & present a token of appreciation after the match. 2486 cheers for every team in & outside of the pit. MOE 365 awarded the team with their GP Award at Championships for being a role model team. FRC 996 sent a note to say, "Your team is

an absolute inspiration to me as well as a model for what I wish our team to become, whether it be in the near future or long after I have graduated.”

Because of CHS’s minority, low income demographics, it was often viewed as a lower quality school than their rivals. Budget cuts & dropping enrollment led to the decision to close a high school. Numerous individuals and organizations outside robotics spoke up in favor of CHS staying open, and many times 2486 was mentioned as an outstanding STEM program that should allow the school to remain open. When the decision was made to keep CHS open despite “underperformance”, 2486 was cited on the FUSD website as part of the “most rigorous academic coursework found in any of the District’s high schools.” 2486 continues to work hard to improve CHS’s image by attracting positive media attention & educating NAZ about FIRST.

The fire flickered on the faces of new & veteran ‘Nuts alike as they marveled at the camaraderie of the group. Each felt they had a role to play & that they belonged. For many, their closest friends were found within the team. They work, laugh, play, cry, & celebrate together, even when doing activities outside robotics. 2486 is diverse culturally, socioeconomically, & academically, but together they form a family unit: a sanctuary that is stronger than the sum of their parts.

When ‘Nuts leave the tree, they go on to do great things. Larry is a Gate’s Scholar training to be a physics teacher at NAU & mentors an FLL team as a year-round part-time job. Vitas is changing the world at the University of Chicago by studying political science & environmental policy. If anyone will be a positive voice for STEM, it’s him. Maddie is studying robotics engineering at Worcester Polytechnic Institute & has successfully applied to be an RA. Combined, these 3 ‘Nuts were offered over \$1 million in scholarships! They continue to contribute to 2486 from near & far.

‘Nuts have received both team & individual recognition. In addition to their impressive FIRST resume, one ‘Nut was honored as a Dean’s List Finalist for his growth through FIRST, 2 ‘Nuts were recognized twice each as outstanding FLL Mentors, & a ‘Nut & a coach were named SFAZ Innovation Heroes. One ‘Nut received a Raytheon FIRST Scholarship & 2 are Flinn Finalists. All AlumNuts agree that FIRST has shaped their futures in a way no other program could.

As the fire flickered low, the new ‘Nuts sat in awe of the legacy they had been given. One spoke into the night, “Thank you for giving the gifts of Inspiration, GP, & Family. You’ve changed our lives for the better.” The veteran ‘Nuts looked around at the many eager, excited faces. “We want to thank you as well. We lit the spark. Now you’ve reassured us that in your capable hands it will be kindled by your actions into a beacon of FIRST that will burn as bright & strong as the stars in our beautiful northern sky.” Just then, a shooting star shot through the night. Each ‘Nut, new & graduating, from near & far, made the same wish. From his perch in a nearby tree, Rocky the Squirrel, smiled sagely, for he knew the best was yet to come.